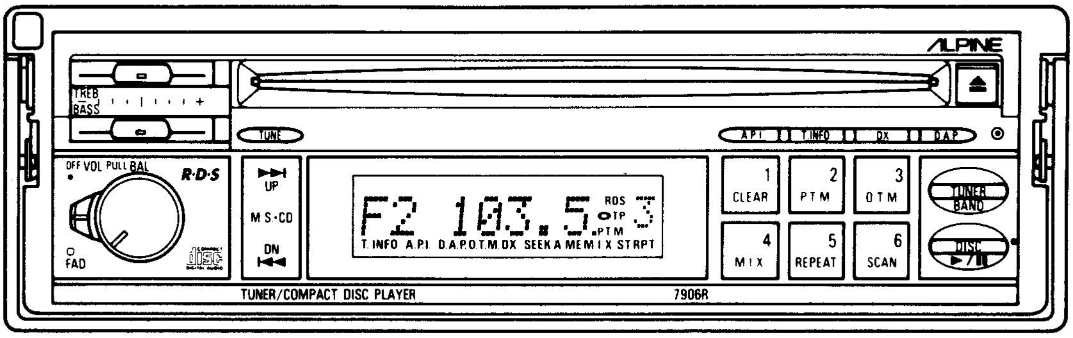
ALPINE SERVICE MANUAL

Digital FM/MW/LW RDS Compact Disc Player

COMPACT
disc
DIGITAL AUDIO

- For the CD player mechanism parts (DP24A210) of this model, refer to the DP-S Series · Service Manual (68P13315W03).


ALPINE
TREB
BASS
TUNE
A.P.I
T.INFO
DX
D.A.P
OFF VOL PULL BAL
R·D·S
FAD
UP
M.S·CD
DN
F2 103.5
RDS
TP
PTM
T.INFO A.P.I D.A.P.O.T.M DX SEEK A.MEM M I X STRPT
1 CLEAR
2 PTM
3 OTM
4 MIX
5 REPEAT
6 SCAN
TUNER BAND
DISC ►/II
TUNER/COMPACT DISC PLAYER
7906R

7906R

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Spare Schematic Diagram Inserted.

Specifications

<CD SECTION>

System	Optical (Compact Disc System)
Quantizing Bit Number	16 Bit Linear System
Channels	2 channels
Distortion (at 1kHz)	0.1%
Frequency Response (Ref. 1kHz)	0 ± 3dB (17Hz) 0 ± 2dB (127Hz~10.007kHz) 0 ± 4dB (19.997kHz)
S / N Ratio	80dB
Separation (at 1kHz)	60dB
De-Emphasis (Ref. 1kHz)	4kHz : -20 ± 2dB 16kHz : -20 ± 2dB
Noise Level (at VOL. Min)	0.1mV
Currents (at Play)	1.2A
Tone Control Effect	Bass : ± 14 ± 3dB (100Hz) Treble : ± 13 ± 3dB (10kHz)

<FM SECTION>

Intermediate Frequency	10.7 ± 0.1MHz
Frequency Range	87.5~108MHz
Usable Sensitivity (Mono 30dB S / N, at 98.1MHz)	17.2dBf
Limiting Sensitivity (-10dB, at 98.1MHz)	17.2 ± 5dBf
S / N Ratio (Stereo at 98.1MHz)	48dB
Image Rejection (at 106.1MHz)	40dB
IF Rejection (at 90.1MHz)	60dB
Distortion (Input 1mV at 98.1MHz)	1%
Frequency Response (Ref. 400Hz, at 98.1MHz)	100Hz : 0 ± 3dB 10kHz : -12 ± 3dB
Stereo Separation (Ref. 1kHz, at 98.1MHz)	25dB
SK Sensitivity (at 98.1MHz)	25.2dBf
PS Sensitivity (at 98.1NHz)	36.2dBf
TP Sensitivity (at 98.1MHz)	36.2dBf

<MW SECTION>

Intermediate Frequency	450kHz
Frequency Range	531~1,602kHz
Sensitivity (20dB S / N, at 999kHz)	45.2dBf
S / N Ratio (at 999kHz)	44dB
Image Rejection (at 1,404kHz)	50dB
IF Rejection (at 603kHz)	60dB
Distortion (at 999kHz)	1%
Frequency Response (Ref. 400Hz, at 999kHz)	100Hz : -3 ± 4dB 4kHz : -12 ± 6dB

<LW SECTION>

Intermediate Frequency	450kHz
Frequency Range	153~281kHz
Sensitivity (20dB S/N, at 216kHz)	52.2dBf
S/N Ratio (at 216kHz)	40dB
Image Rejection (at 216kHz)	50dB
IF Rejection (at 216kHz)	50dB
Distortion (at 216kHz)	2%
Frequency Response (Ref. 400Hz, at 216kHz)	100Hz : -3 ± 4dB 4kHz : -12 ± 6dB

<GENERAL>

Power Supply	DC14V
Pre-Output Voltage/Impedance	1.2V/10kohm
Semiconductors	38IC's, 90Transistors, 25Diodes, 13Zener Diodes
Dimensions (W×H×D)	Chassis : 178×50×153mm Nose : 178×50×15mm
Weight	2.2kg

<COMPACT DISC>

Track Pich	1.6μm
Modulation Frequency	44.1kHz
Transfer Rate	4.3218Mbit/sec.
Dimensions	120/80×1.2mm

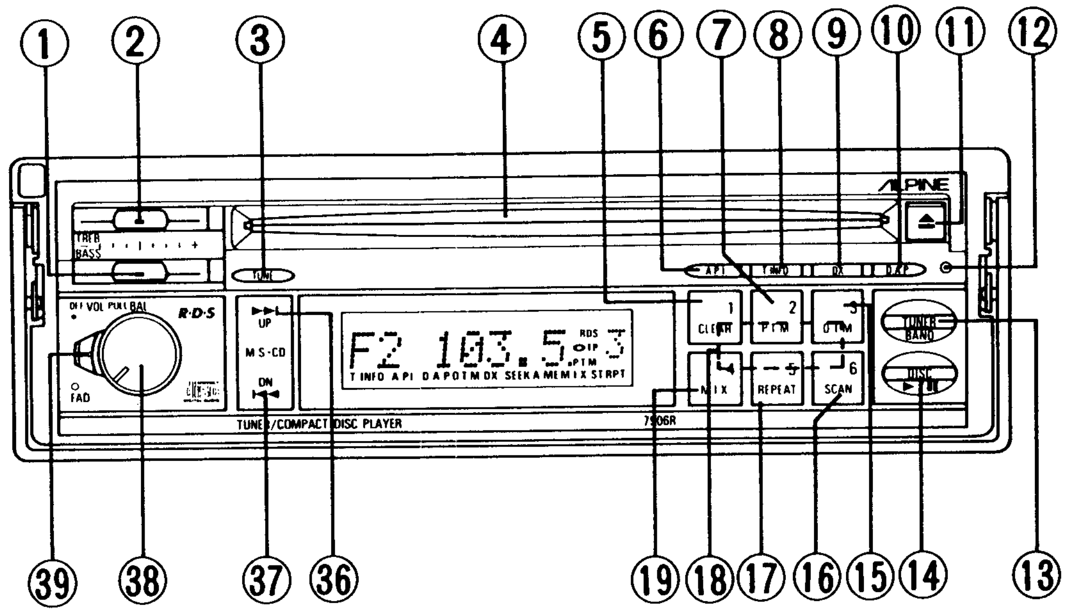
NOTE : Due to Continuing product improvement, specifications and designs are subject to change without notice.

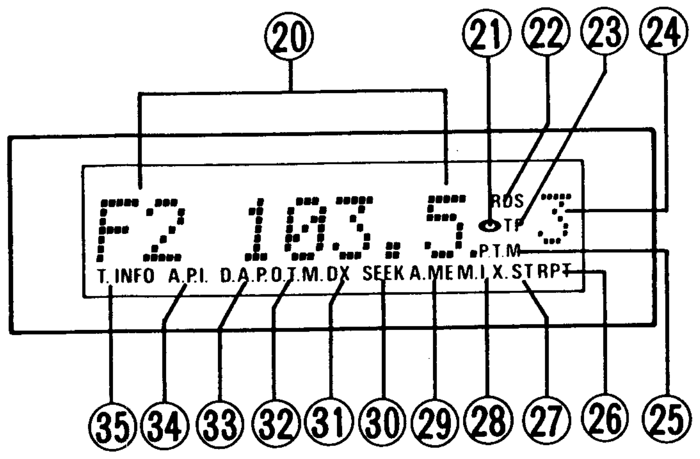
FEATURES

- **FULL FRONT DIN™**
- **HIGH POWER TUNER COMPACT DISC PLAYER**
- **QUICK RELEASE BRACKET (Q.R.B.)**
  Alpine's exclusive Q.R.B. design allows for easy removal of the unit, while still maintaining memory backup. The unit may then be hidden elsewhere in the car or carried with the owner for theft prevention. This Q.R.B. also provides for easy reinstallation of the unit.
- **Q.R.B. MINDER**
  An audible reminder to remove your Head Unit upon leaving the vehicle.
- **8-TIMES OVERSAMPLING DIGITAL FILTER**
- **3-INCH DISCS**
  This unit plays 3-inch compact discs without using an adaptor ring.
- **M.I.X. (RANDOM PLAY-CD only)**
  The music selections on the disc will be played randomly.
- **REPEAT**
- **DISC SCAN**
  Locates the beginning of each track and plays the first 10 seconds.
- **P.T.M. (PREFERRED TRACK MEMORY)**
  P.T.M. allows the memorization of up to 6 music selections per disc for playback.
- **O.T.M. (OMITTED TRACK MEMORY)**
  O.T.M. allows the memorization of up to 6 music selections not to be played for each disc.
- **T. INFO (TRAFFIC INFORMATION)**
  While T. INFO function turns on, a traffic information service automatically can be received when a station transmits.
- **A.P.I. (AUTO PROGRAM IDENTIFICATION)**
  While A.P.I. function turns on in FM mode, a best receptive RDS station which has same program as the station you are receiving automatically can be received.

  For details about RDS, refer to the RDS manual attached.
- **A. MEMO (AUTO MEMORY)**
  In the A. MEMO mode, six of the strongest each band stations will be stored automatically.
- **D.A.P. (DIRECT ACCESS PRESET)**
  D.A.P. allows the storage of each band presets on the same band, eliminating the need to press the band select button. Up to six stations can be mixed in the D.A.P. band.
- **LITETOUCH™ 30-STATION PRESETS**
  FM1 : 6, FM2 : 6, MW : 6, LW : 6, D.A.P.: 6

CONTROLS AND INDICATORS





Listed below are all the Controls and their Indicators. Please see the Operation Section for explanations.

① **BASS Control**
② **TREBle Control**
③ **TUNE Switch**
④ **Disc Slot**
⑤ **CLEAR (Memory Clear) Button**

⑥ **Auto Program Identification Button**
⑦ **P.T.M. (Preferred Track Memory) Button**
⑧ **Traffic INFOrmation Button**
⑨ **DX (Local/Distance) Switch**
⑩ **D.A.P. (Direct Access Preset) Button**

⑪ **Eject Button**
⑫ **Reset Switch**
⑬ **TUNER/BAND Button**
⑭ **DISC (Play/Pause) Button (▶/II)**
⑮ **O.T.M. (Omitted Track Memory) Button**

⑯ **SCAN Button**
⑰ **REPEAT Button**
⑱ **Station Preset Buttons**
⑲ **M.I.X. Button**
⑳ **Digital Display**

㉑ **Disc in Indicator**
㉒ **RDS Indicator**
㉓ **TP Indicator**
㉔ **Preset No. Indicator**
㉕ **P.T.M. Indicator**

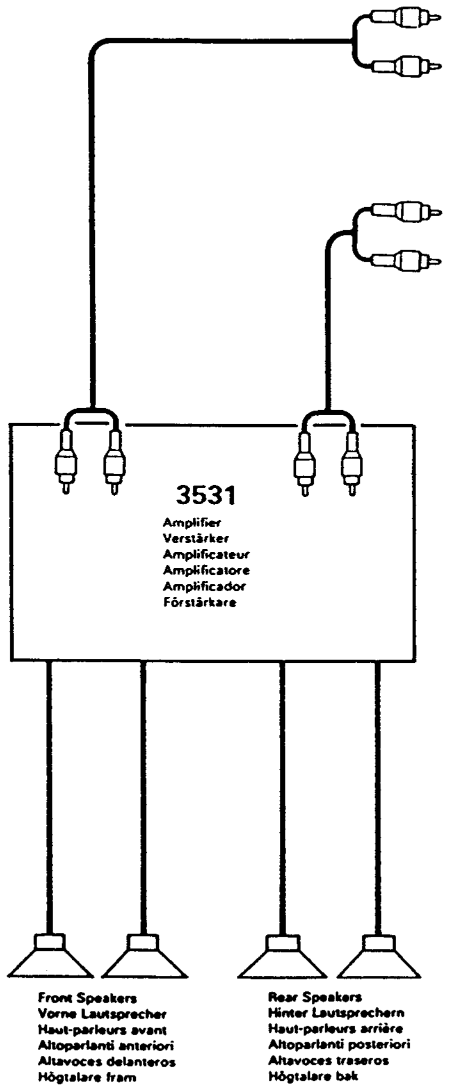
㉖ **RePeaT Indicator**
㉗ **STereo Indicator**
㉘ **M.I.X. Indicator**
㉙ **Auto MEmory Indicator**
㉚ **SEEK Indicator**

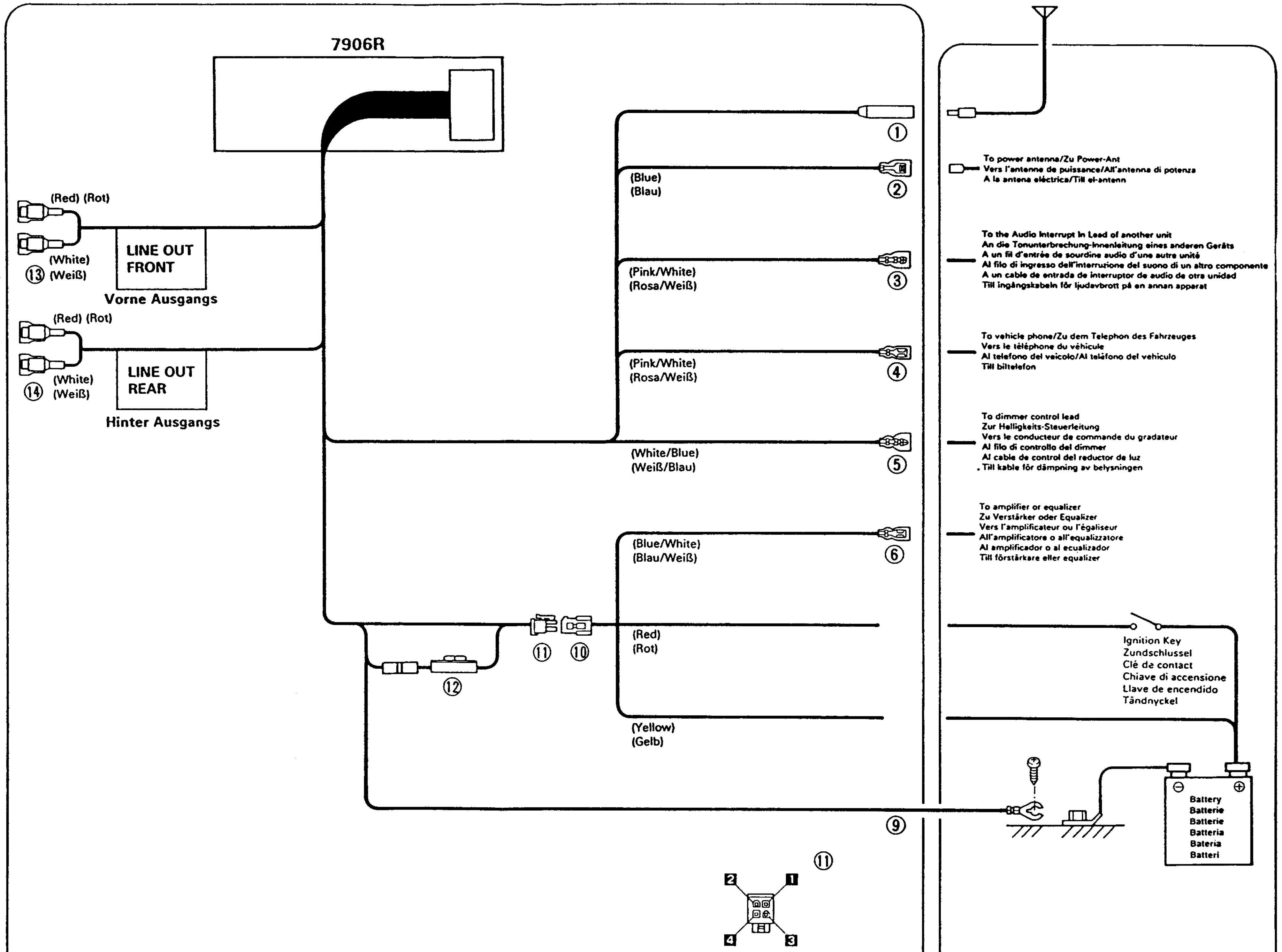
㉛ **DX (Distance) Indicator**
㉜ **O.T.M. Indicator**
㉝ **D.A.P. Indicator**
㉞ **A.P.I. Indicator**
㉟ **T. INFO Indicator**

㊱ **M.S. · CD UP (▶▶I) Switch**
㊲ **M.S. · CD DownN (I◀◀) Switch**
㊳ **Power Switch/VOLume Control/BALance Control (Pull)**
㊴ **FADer Control**

Connections/Anschlüsse/Connexions/Collegamenti/Conexiones/Anslutningar

SYSTEM-1/SYSTEME-1/SISTEMA-1


3531
Amplifier
Verstärker
Amplificateur
Amplificatore
Amplificador
Förstärkare
Front Speakers
Vorne Lautsprecher
Haut-parleurs avant
Altoparlanti anteriori
Altavoces delanteros
Högtalare fram
Rear Speakers
Hinter Lautsprechern
Haut-parleurs arrière
Altoparlanti posteriori
Altavoces traseros
Högtalare bak


7906R
(Red) (Rot)
(White) (Weiß)
⑬
LINE OUT FRONT
Vorne Ausgangs
(Red) (Rot)
(White) (Weiß)
⑭
LINE OUT REAR
Hinter Ausgangs
①
(Blue) (Blau)
②
(Pink/White) (Rosa/Weiß)
③
(Pink/White) (Rosa/Weiß)
④
(White/Blue) (Weiß/Blau)
⑤
(Blue/White) (Blau/Weiß)
⑥
⑪ ⑩
⑫
(Red) (Rot)
(Yellow) (Gelb)
⑨
⑪
1 2 3 4
To power antenna/Zu Power-Ant
Vers l'antenne de puissance/All'antenna di potenza
A la antena eléctrica/Till el-antenn
To the Audio Interrupt In Lead of another unit
An die Tonunterbrechung-Innenleitung eines anderen Geräts
A un fil d'entrée de sourdine audio d'une autre unité
Al filo di ingresso dell'interruzione del suono di un altro componente
A un cable de entrada de interruptor de audio de otra unidad
Till ingångskabeln för ljudavbrott på en annan apparat
To vehicle phone/Zu dem Telephon des Fahrzeuges
Vers le téléphone du véhicule
Al telefono del veicolo/Al teléfono del vehiculo
Till biltelefon
To dimmer control lead
Zur Helligkeits-Steuerleitung
Vers le conducteur de commande du gradateur
Al filo di controllo del dimmer
Al cable de control del reductor de luz
Till kable för dämpning av belysningen
To amplifier or equalizer
Zu Verstärker oder Equalizer
Vers l'amplificateur ou l'égaliseur
All'amplificatore o all'equalizzatore
Al amplificador o al ecualizador
Till förstärkare eller equalizer
Ignition Key
Zundschlussel
Clé de contact
Chiave di accensione
Llave de encendido
Tändnyckel
⊖ ⊕
Battery
Batterie
Batterie
Batteria
Bateria
Batteri

1	REMOTE ON	Blue/White (Blau Weiß)
2	IN PAUSE	Brown/White (Braun Weiß)
3	BATTERY	Yellow (Gelb)
4	IGNITION	Red (Rot)

① **Antenna Receptacle**

② **Power Antenna Lead (Blue)**
When loaded with a power antenna, connect to the +B terminal of the power antenna.

③ **Audio Interrupt Out Lead (Pink/White)**

④ **Audio Interrupt In Lead (Pink/White)**

⑤ **Dimmer Control Lead (White/Blue)**
This lead is for connection to a rheostat such as the dashboard light dimmer in your vehicle. Applying (+)12V to this lead causes the maximum dimming. Varying the voltage controls the brightness of the display. This allows you to dim the unit's display with the dashboard lights.

⑥ **Remote Turn-On Lead (Blue/White)**
Connect this lead to the remote turn-on lead of your amplifier or signal processor.

⑦ **Switched Power Lead (Ignition) (Red)**
Connect this lead to an open terminal on the vehicle's fuse box or another unused power source which provides (+)12V only when the ignition is turned on or in the accessory position.

⑧ **Battery Lead (Yellow)**
Connect this lead to the positive (+) post of the vehicle's battery.

⑨ **Ground Lead**
Connect this lead to a good chassis ground on the vehicle. Make sure the connection is made to bare metal and is securely fastened using the sheet metal screw provided.

⑩ **Power Wiring Harness (Included)**
Connect to the Power Supply Connector ⑪.

⑪ **Power Supply Connector**
Connect to the receptacle of Power Wiring Harness ⑩.

⑫ **Fuse Holder (3A)**

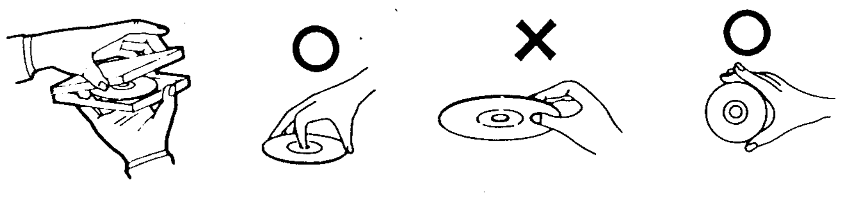
⑬ **Front Output RCA Connectors**
RED is right and WHITE is left.

⑭ **Rear Output RCA Connectors**
RED is right and WHITE is left.

PROPER CARE OF YOUR DISC

Proper Handling

Handle your disc as shown. Do not drop the disc while handling. Hold the disc so you will not leave fingerprints on the surface. If the surface is scratched, it may cause the pickup to skip signal tracks. Do not affix tape, paper, or gummed labels on the disc. Do not write on the disc.



Keep Your Discs Clean

Fingerprints, dust, or soil on the surface could cause the pickup to skip signal tracks. For routine cleaning, wipe the playing surface with a clean, soft cloth from the center of the disc to the outer edge. If the surface is heavily soiled, dampen a clean soft cloth in a solution of mild neutral detergent before cleaning the disc. (Fig. A)

Disc Accessories

Various disc accessories for protecting disc surface and improving sound quality will be available on the market. However, most of them will give influence on thickness and diameter of the disc. Using such accessories will make the disc specifications out of the limit and may cause some troubles. So, do not use them with unit. (Fig. B)

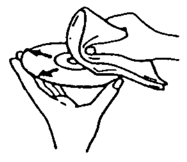


Fig. A

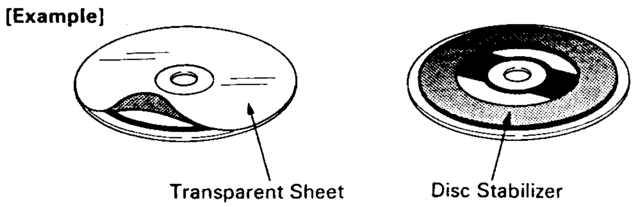


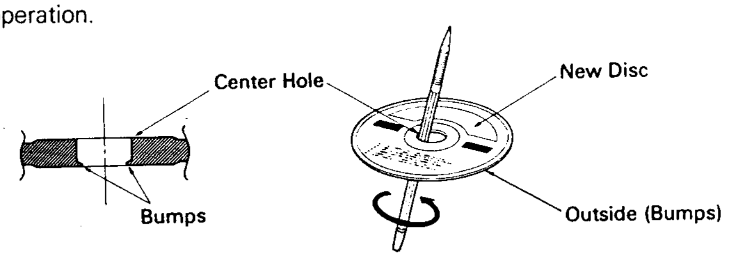
Fig. B

Caution for New Discs

When a newly purchased disc is inserted, it may be ejected after initial loading. This is caused by small bumps around the center hole and outside of the disc, which prevents stable loading to the correct position.
To remove the bumps, rub the inside edge of the hole and outside edge of the disc with a ball-point pen or other such instrument, then insert the disc again.

Please note

The mechanism automatically ejects such a disc as a protective measure, and this is not a faulty operation.



PRECAUTIONS

Eject Auto-Lock

Be sure to eject the compact disc from the player before removing the unit from the dash. It is necessary to remove the CD in order for the locking mechanism to be activated. Failure to do this may cause damage to the compact disc or the laser mechanism.

Thermal Protection Circuit

Be sure the temperature inside the vehicle is between +60°C (+140°F) and −10°C (+14°F) before attempting to play a disc. When the temperature is over +60°C (+140°F) the protection circuit functions to stop the CD player, and "— — — H" is displayed.

Moisture Condensation

You may notice the playback sound wavering. When this happens, remove the disc from the player and wait about an hour until the moisture evaporates.

Handling of the Unit When Removed From Quick Release Bracket

When the 7906R is removed from the in-dash bracket, remember these care tips:

1. Do not drop or apply shock to the unit. It might cause permanent damage.
2. Keep the unit away from:
   a: Water and moisture
   b: Direct sun and heat
   c: Excessive dust
   d: Strong magnetic field such as an audio speaker, magnet, or TV.
3. Your authorized Alpine dealer carries an optional carrying case for transporting the player when it is out of the vehicle.

Damaged Disc

Do not attempt to play cracked, warped, or otherwise damaged discs. Playing a bad disc could severely damage the playback mechanism.

Storage

When not in use, place your discs in their individual cases and store them in a cool place away from the sun, heat, and dust.

Never Attempt the Following

Do not grip or pull out the disc while it is being pulled back into the player by the automatic reloading mechanism. (Fig. C)

Do not pull the unit out from the dash while a disc is playing. The disc will be unstabl in the unit and may be damaged.

Do not attempt to insert a disc into the unit when the unit power is off.

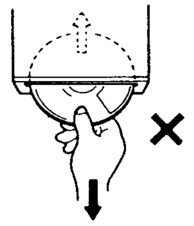


Fig. C

PROPER CARE OF YOUR DISC

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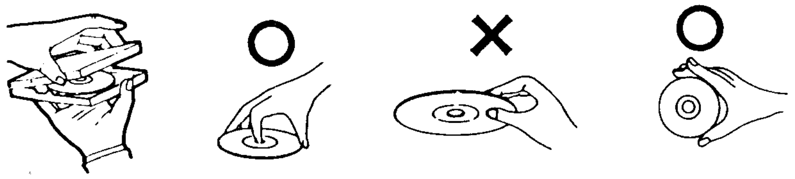

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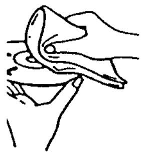

ᖴig. A

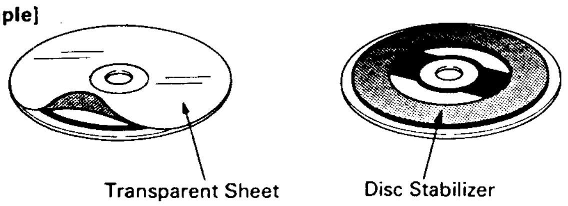

Fig. B

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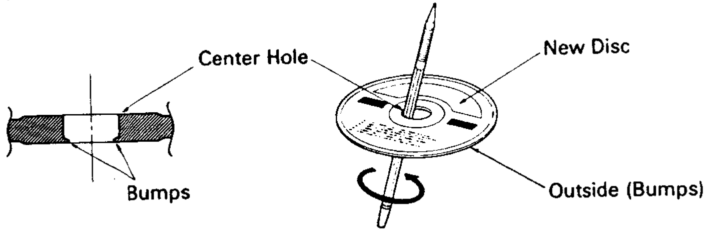

PRECAUTIONS

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Thermal Protection Circuit
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Moisture Condensation
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1. Do not drop or apply shock to the unit. It might cause permanent damage.
2. Keep the unit away from:
   a: Water and moisture
   b: Direct sun and heat
   c: Excessive dust
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When not in use, place your discs in their individual cases and store them in a cool place away from the sun, heat, and dust.

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Do not pull the unit out from the dash while a disc is playing. The disc will be unstable in the unit and may be damaged.

Do not attempt to insert a disc into the unit when the unit power is off.

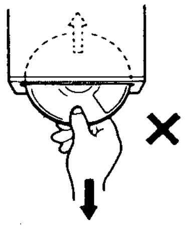


Fig. C

PRECAUTIONS

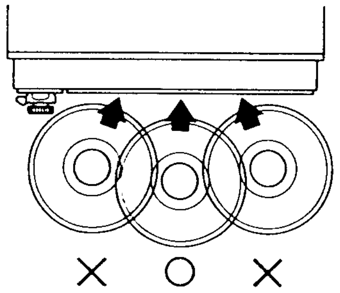
Installation Location
The 7906R is designed for in-dash mounting. For optimum performance, make sure the player will not be exposed to:

1. Direct sun and heat
2. High humidity
3. Excessive dust
4. Excessive vibrations.

Caution During Playback
Playing a disc while driving on a very bumpy road may result in skips, but this will not scratch the disc or damage the player.

1. Your player accepts only one disc at a time for playback. Do not attempt to load more than one disc.
2. Make sure the label side is facing up when you insert the disc. Your player will automatically eject any disc that is inserted incorrectly. If the player continues to eject a correctly inserted disc, push the Reset switch ⑫ with a pointed object such as a sharp pencil.

Single CD
This unit allows direct mounting of a 3-inch disc without a CD adaptor and plays back the disc. However, the disc may be ejected in some cases without playing if there are bumps at the center hole of the disc, etc. In such a case, try to insert the disc into center of the disc insertion slot again.



OPERATION

● BASIC OPERATION

Initial System Set-up

When operating for the very first time after installation or replacement of the car battery, press the Reset switch ⑫ with a sharp pencil or other pointed object.

Power Switching and Volume Control

Rotating the Power switch ㊳ clockwise turns power ON and continuously increases the volume. Rotating the control counterclockwise will continuously decrease the volume, and turn the power OFF.

NOTE:

The noise level on compact discs is much lower than on analog-type records or tapes; therefore, when inserting a disc, keep the volume control turned fully counterclockwise, then adjust volume by gradually turning the control clockwise once playback begins.
Do not turn clockwise abruptly as the excessive power could damage the speakers.

Balance Control

Pull on the VOLume control ㊳ and rotate to balance between left and right speakers.

Fader Control

Rotate the FADer control ㊴ for your desired front to rear volume balance.

Separate Bass and Treble Controls (①, ②)

Slide these controls to the right to increase, and to the left to decrease the level of Bass or Treble.

Function Switching

1. Tuner Mode
   With no disc loaded, the unit is normally in the tuner mode. Press the TUNER button ⑬ to switch from CD to Radio.

2. CD Mode
   When a disc is loaded, the unit automatically goes into the CD mode. Press the DISC (▶/❚❚) button ⑭ to switch from Radio to CD.

Cautions During CD Playback

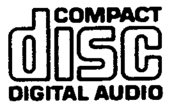
Playing a disc while driving on a very bumpy road may result in skipping, but this will not scratch the disc or damage the player.

NOTES:

1. Your player accepts only one disc at a time for playback. Do not attempt to load more than one disc.
2. Make sure the label side is facing up when you insert the disc. Your player will automatically eject any disc that is inserted incorrectly. If the player continues to eject a correctly inserted disc, push the Reset switch ⑫ with a pointed object such as a sharp pencil.

OPERATION

3. You can play 3-inch CDs in this player without using an adaptor ring.
4. Make sure your discs are labeled as shown below:



● RADIO OPERATION

If the unit is not in the Radio mode, press the TUNER/BAND button ⑬.

Tuning Band Selection

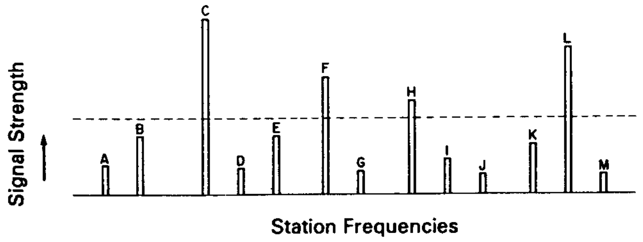
Press the BAND button ⑬ to select the desired tuning band. The Band indicator shows your selection.

Local/Distance (DX) Seek Sensitivity for FM, MW and LW

You can select the radio seek sensitivity local or distance (DX), by pressing the DX (distance) switch ⑨.

In the local mode, with no DX indication ㉛, the radio tunes in only strong stations (stations C, F, H and L in the illustration) below.

In the distance mode, with DX indication ㉛, the radio tunes in both strong and weak stations (all stations from A to M in the illustration).



Manual TUNING

1. Press the TUNE switch ③ until the SEEK ㉚ and A. ME ㉙ indicators disappear in the display.
2. To select the tuning band, press the BAND button ⑬. The Band indicator shows your selection in the display ⑳.
3. To tune to higher frequencies, press the M.S. · CD switch on the top (UP) ㊱. To tune to lower frequencies, press this same switch on the bottom (DownN) ㊲.

OPERATION

Auto SEEK Tuning

1. Press the TUNE switch ③ until the SEEK indicator ㉚ appears in the display.
2. Select the tuning band with the BAND button ⑬.
3. Press the UP ㊱ or DowN ㊲ switch. The unit automatically tunes to the next
   lower frequency and locks on that station.

Preset Memory Programming

Follow the instructions below to enter stations into preset memory:

1. Select the tuning band (FM1, FM2, MW or LW) with the BAND button ⑬.
2. Tune in your desired station using Manual or Auto SEEK tuning.
3. Press the Preset button number 1 ⑤ for more than two seconds. The digital
   will begin to blink. Press that preset button again while the display is blinking
   seconds).
4. The frequency you selected will be placed into Preset Memory number 1 and
   appear in the display.
   NOTE:
   If a preset memory has already been set in the same address, it will be cle
   the new station will be memorized.
5. Follow steps 2 — 3 for the remaining presets (2 — 6). This procedure should
   followed for FM1, FM2, MW and LW.

Auto Memory Preset

1. Press the TUNE switch ③ to light up the A. ME indicator ㉙.
2. Select the desired tuning band (FM1, FM2, MW or LW) with the BAND butto
3. Press the UP ㊱ or DN ㊲ switch. The tuner will automatically seek the 6 stro
   stations in each band and memorize them in order of the signal strength. Th
   stations are automatically placed in the preset memory with the strongest sta
   Preset No. 1 and the 6th strongest station in Preset No. 6. When seeking sta
   tuner first seeks in the local tuning mode. If less than 6 stations are memoriz
   tuner seeks again in the distance (DX) mode.
4. After finishing the Auto Memory Preset, the tuner goes to the station placed
   Memory No. 1. If no stations are memorized, it returns to the original station
   listening to before the Auto Memory Preset procedure began. When auto me
   presetting is completed, the A. ME indicator ㉙ will disappear and the SEEK i
   ㉚ will appear.

NOTE:

The Auto Memory Preset feature also works in the D.A.P. mode.

Preset Tuning

After the preset stations have been memorized, you can tune in your desired
(within the band displayed) with one touch of a button.

1. Select the tuning band (FM1, FM2, MW or LW) with the BAND button ⑬.
2. Press any one of the Preset buttons ⑱ and the indicator on that button will l
3. The frequency of the station placed in the selected preset location will appea
   display.

D.A.P. (Direct Access Preset)

This feature allows the storage of FM, MW and LW presets on the same ban
the D.A.P. button ⑩ to light up the D.A.P. indicator ㉝. To program stations into
band, follow steps 1 — 3 as described in the Preset Memory Programming secti

Accessing the D.A.P. Presets

1. Press the D.A.P. button ⑩. The D.A.P. indicator ㉝ will illuminate in the displ
2. Press one of the preset buttons ⑱.
3. The frequency of the station placed in the selected D.A.P. location will appea
   display.

OPERATION

u can play 3-inch CDs in this player without using an adaptor ring.
ake sure your discs are labeled as shown below:

COMPACT
disc
DIGITAL AUDIO

DIO OPERATION

e unit is not in the Radio mode, press the TUNER/BAND button ⑬.

g Band Selection

ss the BAND button ⑬ to select the desired tuning band. The Band indicator shows election.

/Distance (DX) Seek Sensitivity for FM, MW and LW

can select the radio seek sensitivity local or distance (DX), by pressing the DX ce) switch ⑨.
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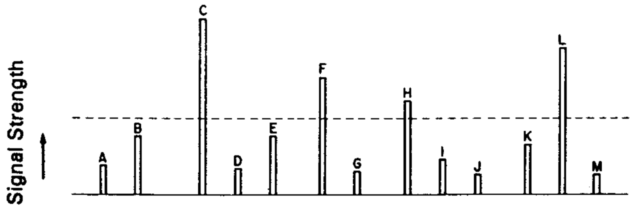


Station Frequencies

al TUNING

ess the TUNE switch ③ until the SEEK ㉚ and A. ME ㉙ indicators disappear in the splay.
select the tuning band, press the BAND button ⑬. The Band indicator shows your lection in the display ⑳.
tune to higher frequencies, press the M.S. · CD switch on the top (UP) ㊱. To tune lower frequencies, press this same switch on the bottom (DowN) ㊲.

OPERATION

Auto SEEK Tuning

1. Press the TUNE switch ③ until the SEEK indicator ㉚ appears in the display.
2. Select the tuning band with the BAND button ⑬.
3. Press the UP ㊱ or DowN ㊲ switch. The unit automatically tunes to the next higher or lower frequency and locks on that station.

Preset Memory Programming

Follow the instructions below to enter stations into preset memory:

1. Select the tuning band (FM1, FM2, MW or LW) with the BAND button ⑬.
2. Tune in your desired station using Manual or Auto SEEK tuning.
3. Press the Preset button number 1 ⑤ for more than two seconds. The digital display ⑳ will begin to blink. Press that preset button again while the display is blinking (within 5 seconds).
4. The frequency you selected will be placed into Preset Memory number 1 and will appear in the display.
   NOTE:
   If a preset memory has already been set in the same address, it will be cleared and the new station will be memorized.
5. Follow steps 2 — 3 for the remaining presets (2 — 6). This procedure should be followed for FM1, FM2, MW and LW.

Auto Memory Preset

1. Press the TUNE switch ③ to light up the A. ME indicator ㉙.
2. Select the desired tuning band (FM1, FM2, MW or LW) with the BAND button ⑬.
3. Press the UP ㊱ or DN ㊲ switch. The tuner will automatically seek the 6 strongest stations in each band and memorize them in order of the signal strength. These stations are automatically placed in the preset memory with the strongest station in Preset No. 1 and the 6th strongest station in Preset No. 6. When seeking stations, the tuner first seeks in the local tuning mode. If less than 6 stations are memorized, the tuner seeks again in the distance (DX) mode.
4. After finishing the Auto Memory Preset, the tuner goes to the station placed in Preset Memory No. 1. If no stations are memorized, it returns to the original station you were listening to before the Auto Memory Preset procedure began. When auto memory presetting is completed, the A. ME indicator ㉙ will disappear and the SEEK indicator ㉚ will appear.

NOTE:
The Auto Memory Preset feature also works in the D.A.P. mode.

Preset Tuning

After the preset stations have been memorized, you can tune in your desired station (within the band displayed) with one touch of a button.

1. Select the tuning band (FM1, FM2, MW or LW) with the BAND button ⑬.
2. Press any one of the Preset buttons ⑱ and the indicator on that button will light.
3. The frequency of the station placed in the selected preset location will appear in the display.

D.A.P. (Direct Access Preset)

This feature allows the storage of FM, MW and LW presets on the same band. Press the D.A.P. button ⑩ to light up the D.A.P. indicator ㉝. To program stations into the D.A.P. band, follow steps 1 — 3 as described in the Preset Memory Programming section.

Accessing the D.A.P. Presets

1. Press the D.A.P. button ⑩. The D.A.P. indicator ㉝ will illuminate in the display.
2. Press one of the preset buttons ⑱.
3. The frequency of the station placed in the selected D.A.P. location will appear in the display.

OPERATION

● CD OPERATION

If the unit is not in the CD mode, press the DISC button ⑭.

Load

1. Insert a disc into the Disc Slot ④. When the disc is halfway in, the power loading system will pull the disc in and guide it into the play position.
   When the disc is in, the Disc in indicator ㉑ will illuminate.
2. If the disc is left at least halfway in, press the DISC button ⑭ or press the disc edge lightly to move it forward. "LOAD" will show in the display ⑳ while loading.
3. The digital display shows "0 0'00" for a second then it shows "1 0'00" and begins playback.
4. When a disc is loaded while the unit is in the tuner mode, it will automatically switch to the CD mode.

Disc Eject and Reload

Press the Eject button ⑪. The digital display ⑳ will show "EJECT" for a second, then the disc will come halfway out. If the eject status is maintained more than 15 seconds in case of 5-inch disc, the self loading system will be automatically actuated and the disc will be reloaded into the mechanism and the player will be set to the pause mode. Press the DISC button ⑭ to resume playback. When using 3-inch discs, the eject status continues until the disc is pushed back in.

Pause

Press the DISC button ⑭ to hold playback temporarily. The playback stops, but the disc remains inside the player. To resume playback, press the DISC button ⑭ again.

Music Sensor (Skip)

This feature allows you to access the beginning of your musical track selection simply and quickly. It is functional in the play or pause mode. The digital display ⑳ shows the track number you have selected.

- To advance to the next track on the disc, press the ⏭ side of the M.S. · CD switch ㊱.
  1. Playback stops, the pickup moves up to the beginning of the next track. That track number appears in the digital display ⑳.
  2. Playback begins immediately.
  3. If you wish to access a track further ahead on the disc, continue pressing the ⏭ side of the M.S. · CD switch ㊱ until you reach the track of your choice.

- To replay the track that is currently playing, press the ⏮ side of the M.S. · CD switch ㊲.
  1. Playback stops, the pickup moves back to the beginning of the current track. The track number in the digital display ⑳ remains the same.
  2. Playback begins immediately from the beginning of the track.
  3. If you access a track further towards the beginning of the disc, continue pressing the ⏮ side of the M.S. · CD switch ㊲ until you reach the track of your choice.

Fast Forward/Fast Backward

The Fast Forward/Fast Backward feature works in the play mode.

1. Press either the M.S. ⏭ ㊱ or the M.S. ⏮ ㊲ switch and hold it for more than one second.
2. To move the pickup forward rapidly, hold down the M.S. UP ⏭ switch ㊱.
3. To move the pickup backward rapidly, hold down the M.S. DN ⏮ switch ㊲.
4. Release the button when you get to the desired position on the disc.
5. When the pickup reaches the end of the disc, it automatically returns to the beginning. Playback will then start from the beginning of the disc.

REPEAT (One)

This feature allows you to continuously playback a single track.

1. Press the REPEAT button ⑰. The RPT indicator ㉖ will illuminate.
2. The musical track shown in the display will be played back repeatedly.
3. To defeat the repeat function, press the REPEAT button ⑰ a second time.

SCAN

Press the SCAN button ⑯. The player will play back the first 10 seconds of each track in succession. The track No. will blink in the SCAN mode. This function is useful in searching for a specific program ahead on a disc. Press the SCAN button ⑯ a second time to deactivate this function.

M.I.X. (Random Play)

Depress the M.I.X. button ⑲ while in the CD mode. The M.I.X. indicator ㉘ will illuminate. The musical tracks will be played back in a random sequence generated by the microprocessor. After all the tracks on the disc have been played back once, the player will begin a new random sequence.

P.T.M. (Preferred Track Memory)

This feature allows you to select up to 6 of your favorite tracks on a disc and program them for play in the order you select them. The unit automatically plays your selections sequentially, starting with the first track chosen.

Programming the Preferred Tracks in Memory

1. Select a track on the disc that you want to memorize. (Refer to the SCAN section.)
2. Lightly press the P.T.M. button ⑦ for less than 2 seconds.

Example:

The display shows the following when the second track on a disc is being programmed into P.T.M. Address No.1.

2 0'00

PTM 1=T 2

3. Repeat procedures 1 and 2 above to program your other selections (up to 6 tracks).

Playing the Tracks Programmed with the P.T.M.

Press the P.T.M. button ⑦ for more than 2 seconds. The P.T.M. indicator ㉕ lights up and the unit begins playing back only the selections programmed by the P.T.M. from the track on the PTM 1 to the last track programmed.

NOTE:

Programming tracks into memory is not possible during P.T.M. playback.

If you attempt to program more than six tracks in the P.T.M., the display shows "PTM = FULL" for 3 seconds and then returns to the previous display before you attempted to program the 7th track. If no selections have been stored in the P.T.M., the display shows "NO PROG" for 3 seconds when the P.T.M. or O.T.M. button is pressed for more than 2 seconds.

PTM = FULL

NO PROG

O.T.M. (Omitted Track Memory)

By using this feature you can skip up to 6 tracks on a disc during play. Programming the tracks to be skipped:

1. Select a track you wish to skip in playback. (Refer to the SCAN section.)
2. Lightly press the O.T.M. button ⑮ for less than 2 seconds.

Example:

When programming the unit to skip the second track on a disc, the track number will be stored at O.T.M. address No.1, as shown in the display below;

2 0'00

OTM 1=T 2

3. Repeat steps 1 and 2 above for any other tracks you wish to skip (up to 6).

To activate the O.T.M. Mode

Press the O.T.M. button ⑮ for more than 2 seconds. The O.T.M. indicator ㉜ illuminates to indicate that the O.T.M. mode is active and the unit will skip the programmed tracks during playback.

Deactivating the P.T.M./O.T.M. Mode

- To deactivate the P.T.M. operation, press the P.T.M. button ⑦ for more than 2 seconds while the unit is in the P.T.M. mode.
- To deactivate the O.T.M. operation, press the O.T.M. button ⑮ for more than 2 seconds while the unit is in the O.T.M. mode.
- Pressing the M.I.X. button ⑲ also deactivates the P.T.M. operation and places the unit in the M.I.X. mode.
- Pressing the Eject button ⑪ will deactivate the P.T.M. or O.T.M. function.

Clearing the Programmed Tracks in P.T.M. or O.T.M. Mode

To erase the tracks one by one, place the unit in normal play mode (not P.T.M. or O.T.M.) and lightly press the CLEAR button ⑤ for less than 2 seconds. The track programmed last will be cleared. For example, to clear the track stored in position "PTM 3" clear from position 6 to 3 by repeating the procedure above. Then program the new track into the "PTM 3" position. You will need to reprogram the selections for positions 4 through 6.

NOTE:

The tracks programmed in the P.T.M. or the O.T.M. operation can not be cleared if another functional operation(s) has been engaged after the unit has been programmed. T clear the programming in this case, press the P.T.M. or the O.T.M. button to select that mode, and then proceed to the clear operation.

Clearing All Memorized Tracks in P.T.M. or O.T.M. Mode

In P.T.M. or O.T.M. mode, press the CLEAR button ⑤ for more than 2 seconds. All th memorized tracks on P.T.M. or O.T.M., whichever is currently active, will be erased and the indicator will show "PTM = 0" or "OTM = 0".

In Normal CD play mode (not in P.T.M. or O.T.M. mode make sure that the O.T.M. an P.T.M. indicators, ㉜ & ㉕, are off), press the CLEAR button ⑤ for more than 2 seconds. All the programmed tracks in the O.T.M. and P.T.M. will be erased and the display will show "PROG CLR".

Q.R.B. Minder

This unit is equipped with a built-in theft prevention reminder system. If the unit is no removed from the Quick Release Bracket after turning the ignition key off, a beeper will sound as a reminder to remove the unit.

Whether the ignition is on or off, the unit may beep when it is being removed from th dash.

You can switch the Q.R.B. Minder system on or off.

1. Press the TUNE switch ③ for 3 seconds.
2. Press the Preset No. 4 button ⑲. The display switches as shown below:

QRBM ON : Q.R.B. Minder is on.

QRBM OFF : Q.R.B. Minder is off.

NOTE:

The unit is initially set to the Q.R.B. Minder on position. If the vehicle's engine does n start for over 2 seconds after turning the ignition key on, the alarm system may be triggered.

MODE SELECTION IN A COMBINED SYSTEM

When the 7906R is connected to another Alpine head unit, follow the procedures belo for changing modes of operation between head units.

1. If combined with an Alpine DAT player with an independent tuner mode select butto any playback mode can be selected by pressing the desired function switch on any unit; i.e.; CD or tuner, etc. CD play can be activated by inserting a disc.
2. If combined with another source unit that does not have an independent tuner mode select switch, the interaction of the 7906R will depend on the circuitry of that unit. F example, if the other unit does not provide a "pause out" signal, you may have to press the Pause button ⑭ on the 7906R when switching from CD play to a function the other unit.

OPERATION

mming tracks into memory is not possible during P.T.M. playback.
ttempt to program more than six tracks in the P.T.M., the display shows "PTM =
3 seconds and then returns to the previous display before you attempted to
the 7th track. If no selections have been stored in the P.T.M., the display shows
G" for 3 seconds when the P.T.M. or O.T.M. button is pressed for more than 2

PTM = FULL

NO PROG

mitted Track Memory)

g this feature you can skip up to 6 tracks on a disc during play. Programming the
be skipped:
t a track you wish to skip in playback. (Refer to the SCAN section.)
y press the O.T.M. button ⑮ for less than 2 seconds.

:
programming the unit to skip the second track on a disc, the track number will be
O.T.M. address No.1, as shown in the display below;

2 0'00

OTM 1=T 2

at steps 1 and 2 above for any other tracks you wish to skip (up to 6).

ate the O.T.M. Mode

the O.T.M. button ⑮ for more than 2 seconds. The O.T.M. indicator ㉜ illuminates
e that the O.T.M. mode is active and the unit will skip the programmed tracks
yback.

ting the P.T.M./O.T.M. Mode

activate the P.T.M. operation, press the P.T.M. button ⑦ for more than 2
ds while the unit is in the P.T.M. mode.
activate the O.T.M. operation, press the O.T.M. button ⑮ for more than 2
ds while the unit is in the O.T.M. mode.
ing the M.I.X. button ⑲ also deactivates the P.T.M. operation and places the unit
M.I.X. mode.
ing the Eject button ⑪ will deactivate the P.T.M. or O.T.M. function.

the Programmed Tracks in P.T.M. or O.T.M. Mode

se the tracks one by one, place the unit in normal play mode (not P.T.M. or
nd lightly press the CLEAR button ⑤ for less than 2 seconds. The track
ed last will be cleared. For example, to clear the track stored in position
clear from position 6 to 3 by repeating the procedure above. Then program the
k into the "PTM 3" position. You will need to reprogram the selections for
4 through 6.

OPERATION

NOTE:

The tracks programmed in the P.T.M. or the O.T.M. operation can not be cleared if another functional operation(s) has been engaged after the unit has been programmed. To clear the programming in this case, press the P.T.M. or the O.T.M. button to select that mode, and then proceed to the clear operation.

Clearing All Memorized Tracks in P.T.M. or O.T.M. Mode

In P.T.M. or O.T.M. mode, press the CLEAR button ⑤ for more than 2 seconds. All the memorized tracks on P.T.M. or O.T.M., whichever is currently active, will be erased and the indicator will show "PTM = 0" or "OTM = 0".

In Normal CD play mode (not in P.T.M. or O.T.M. mode make sure that the O.T.M. and P.T.M. indicators, ㉜ & ㉕, are off), press the CLEAR button ⑤ for more than 2 seconds. All the programmed tracks in the O.T.M. and P.T.M. will be erased and the display will show "PROG CLR".

Q.R.B. Minder

This unit is equipped with a built-in theft prevention reminder system. If the unit is not removed from the Quick Release Bracket after turning the ignition key off, a beeper will sound as a reminder to remove the unit.

Whether the ignition is on or off, the unit may beep when it is being removed from the dash.

You can switch the Q.R.B. Minder system on or off.

1. Press the TUNE switch ③ for 3 seconds.
2. Press the Preset No. 4 button ⑲. The display switches as shown below:

QRBM ON : Q.R.B. Minder is on.

QRBM OFF : Q.R.B. Minder is off.

NOTE:

The unit is initially set to the Q.R.B. Minder on position. If the vehicle's engine does not start for over 2 seconds after turning the ignition key on, the alarm system may be triggered.

MODE SELECTION IN A COMBINED SYSTEM

When the 7906R is connected to another Alpine head unit, follow the procedures below for changing modes of operation between head units.

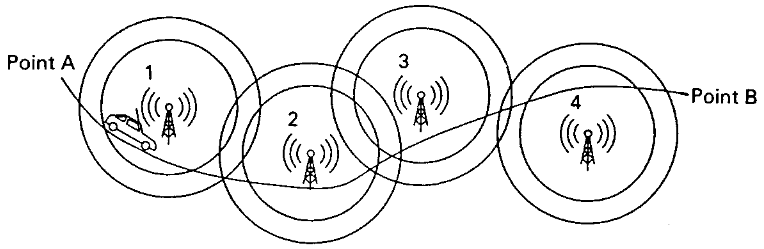
1. If combined with an Alpine DAT player with an independent tuner mode select button, any playback mode can be selected by pressing the desired function switch on any unit; i.e.; CD or tuner, etc. CD play can be activated by inserting a disc.
2. If combined with another source unit that does not have an independent tuner mode select switch, the interaction of the 7906R will depend on the circuitry of that unit. For example, if the other unit does not provide a "pause out" signal, you may have to press the Pause button ⑭ on the 7906R when switching from CD play to a function of the other unit.

GUIDE FOR RDS OPERATION

● R.D.S. METHOD

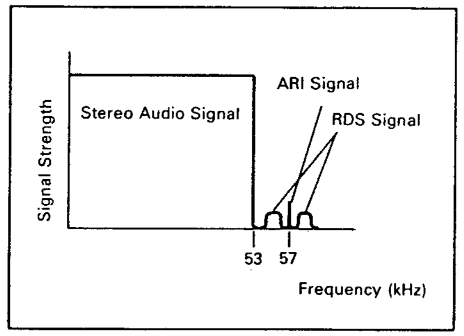
The R.D.S. (Radio Data System) is a broadcasting system in which digital data for automatic tuning, etc., on car radios is added to the FM radio signals.
Its standards are set by the E.B.U. (European Broadcasting Union).

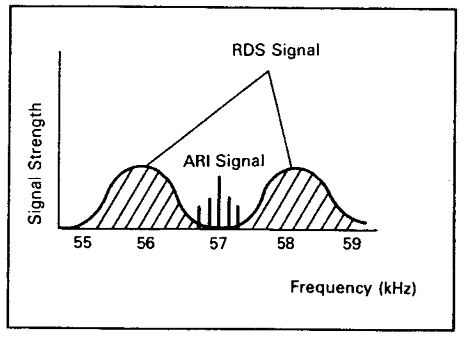
Automatic Tracing



To keep receiving the same broadcast when moving from point A to point B with the network shown above, it was previously necessary to tune in the next station (1 to 4) either manually or using the seek operation once the reception got bad.
The auto tuning system automatically switches the reception station to the station in the network offering the best reception.

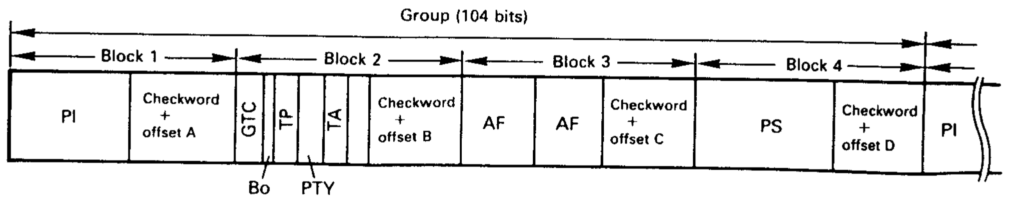
RDS Signal





The RDS data are transferred as shown above so that they do not give any influence on the sound signals.

RDS Data Structure (Sample of type 0A group)



GUIDE FOR RDS OPERATION

The RDS data used are the PI, PS, AF, TP and TA data.

PI:	Program Identification code Code identifying programs and consisting of a country code and a program code.
PS:	Program Service name Broadcast station name data expressed in alphanumerical characters of up to 8.
AF:	Alternative Frequencies Frequency list data for broadcasting stations transmitting the same program.
TP:	Traffic Program identification Identification data for traffic information broadcasting station.
TA:	Traffic Announcement identification Identification data showing traffic information is being transmitted or not.

RDS Function on the 7906R

The RDS data is used for the following operations:

- Auto tuning to the station in the network with the best reception is performed using the PI and AF data.
- The station name is displayed using the PS data.
- Traffic information is received automatically using the TP and TA data.

● A.P.I. (AUTO PROGRAM IDENTIFICATION) OPERATION

1. Press the TUNER/BAND button ⑬ to set the FM mode. (The A.P.I. function does not operate on the MW and LW bands.)
2. Press the A.P.I. button ⑥. The A.P.I. indicator ㉞ appears on the display.
3. Press the TUNE switch ③ to set the seek mode. (The SEEK indicator ㉚ appears on the display.)
4. Press the UP or DN switch (㊱ or ㊲) to start tuning.
   Once the station is tuned in, the RDS indicator ㉒ appears on the display.
   After approximately 1 second, the display switches from the frequency to the station name.
   (If the reception is poor, more time is required for the station name to appear.)
5. When the reception of the station last tuned in becomes poor, the set automatically switches to another frequency broadcasting the same program with better reception. (The automatic follow operation does not function in areas where there is no broadcast network.)
6. Press the A.P.I. button ⑥ to cancel the A.P.I. mode.
   The A.P.I. indicator ㉞ on the display turns off, and the station display switches back to the frequency display.

NOTE:

1. With the A.P.I. button ⑥ in the on position, reception of an RDS station (indicated by the station name display and the lighting of the RDS indicator) will result in automatic tracing of stations having the same broadcast contents.
2. When the A.P.I. button ⑥ is left on in the seek mode, the radio will also stop at non-RDS stations, but the display will continue to show a frequency.

GUIDE FOR RDS OPERATION

● OTHER CONVENIENT FUNCTIONS

Manual tracing operation:

When the A.P.I. button ⑥ is pressed for two seconds while in the A.P.I. mode (when the A.P.I. indicator ㉞ on the display is on), reception switches to the station included among the AF data which is broadcasting the same program with the best reception.
"AF SEEK" is displayed during this operation.
When the operation is completed, "SEEK END" appears on the display.

In areas where operation does not function properly due to reasons of the broadcast stations:

1. Turn the auto tracing function off.
   Press the TUNE switch ③ for 3 seconds. And then press the Preset No. 5 button ⑰.
   The display switches between "PS ONLY" and "PS & API" each time the button is pressed.
   Press the TUNE switch ③ when "PS ONLY" is displayed.
   The auto follow function is now off, but the station name is displayed.
2. Press the A.P.I. button ⑥ for two seconds when the reception of the station tuned in is poor.
   The set searches for the station which is broadcasting the same program with the best reception among those included in the AF data.
   "AF SEEK" appears on the display during the operation.
   When the operation is completed, "SEEK END" appears on the display.

Setting the PI in the Preset Memory

1. Tune in an RDS station and set the display to the station name display.
2. Press one of preset buttons 1 to 6 for two seconds.
3. The station name flashes for 5 seconds. Press the preset button at which you want to store the PI while the display is flashing. The PI is now stored in the memory.
4. Set other preset buttons in the same way.

- If a preset button at which a PI is stored is pressed, the station name will be displayed, not the frequency.
- If a preset button at which a PI is stored is pressed and a station broadcasting the same program cannot be received, "RDS SEEK" appears on the display after 2 seconds and the set searches for a station broadcasting the same program.
- If a station broadcasting the same program cannot be tuned in, reception returns to the original frequency and the preset indicator turns off.

GUIDE FOR RDS OPERATION

RDS auto memory function

Six RDS stations can be stored in the preset memory in order according to the b
reception conditions.
Set to the RDS station reception mode.
Press the TUNE switch ③ to set the A.MEMO mode, then press the UP or DN sw
or ㊲) to start the auto memory operation.

CAUTION:

1. The PI and PS data stored in the memory are cleared when the auto memory f
   is used, so set them in the memory once again.
2. The PI and PS data are not stored in the memory when RDS stations are prese
   the auto memory function.
   To use the PI memory function, press the preset button after the auto m
   operation is finished and store the PI data in the preset memory.

● TRAFFIC INFORMATION FUNCTION

With this function, traffic information can be received automatically from any mo
This function operates using the RDS TP and TA signals or the ARI SK and DK sign

To receive traffic information:

1. Press the TUNER/BAND button ⑬ to set the FM mode. (The traffic informatio
   function does not operate on the MW and LW bands.)
2. Press the T. INFO button ⑧. The T.INFO indicator ㉟ appears on the display.
   The TP indicator ㉓ lights when a traffic information station is received regardle
   the traffic information mode.
3. Press the TUNE switch ③ to set the seek mode. (The SEEK indicator ㉚ appe
   the display.)
4. Use the UP or DN switch (㊱ or ㊲) to start searching.
   The set automatically searches for a traffic information station.
   Once the station is tuned in, the TP indicator ㉓ appears on the display.

5. The following appears on the display when traffic information is received:

T . INFO

NOTE:

When a reception signal strength is poor during the traffic information recep
function which holds the traffic information reception mode works for 20 seco
If no information is received for 20 seconds, the traffic information receptio
is automatically cancelled and the unit returns to the original mode. If a traffic
information termination signal is received during the hold period, the unit also
to the original mode.

6. If traffic information is received while a CD is playing, the CD is automatically
   and the traffic information can be heard. Once the traffic information is over,
   returns to the previous mode.

)THER CONVENIENT FUNCTIONS

ual tracing operation:
ıen the A.P.I. button ⑥ is pressed for two seconds while in the A.P.I. mode (when
..P.I. indicator ㉞ on the display is on), reception switches to the station included
ıg the AF data which is broadcasting the same program with the best reception.
;EEK" is displayed during this operation.
ı the operation is completed, "SEEK END" appears on the display.

**eas where operation does not function properly due to reasons of the
dcast stations:**
urn the auto tracing function off.
ress the TUNE switch ③ for 3 seconds. And then press the Preset No. 5 button ⑰.
he display switches between "PS ONLY" and "PS & API" each time the button is
ressed.
ress the TUNE switch ③ when "PS ONLY" is displayed.
he auto follow function is now off, but the station name is displayed.
ress the A.P.I. button ⑥ for two seconds when the reception of the station tuned in
poor.
he set searches for the station which is broadcasting the same program with the
est reception among those included in the AF data.
\F SEEK" appears on the display during the operation.
vhen the operation is completed, "SEEK END" appears on the display.

ng the PI in the Preset Memory
une in an RDS station and set the display to the station name display.
ress one of preset buttons 1 to 6 for two seconds.
he station name flashes for 5 seconds. Press the preset button at which you want to
tore the PI while the display is flashing. The PI is now stored in the memory.
et other preset buttons in the same way.
a preset button at which a PI is stored is pressed, the station name will be
isplayed, not the frequency.
a preset button at which a PI is stored is pressed and a station broadcasting the
ame program cannot be received, "RDS SEEK" appears on the display after 2
econds and the set searches for a station broadcasting the same program.
a station broadcasting the same program cannot be tuned in, reception returns to
ıe original frequency and the preset indicator turns off.

RDS auto memory function

Six RDS stations can be stored in the preset memory in order according to the best reception conditions.
Set to the RDS station reception mode.
Press the TUNE switch ③ to set the A.MEMO mode, then press the UP or DN switch (㊱ or ㊲) to start the auto memory operation.

CAUTION:

1. The PI and PS data stored in the memory are cleared when the auto memory function is used, so set them in the memory once again.
2. The PI and PS data are not stored in the memory when RDS stations are preset using the auto memory function.
   To use the PI memory function, press the preset button after the auto memory operation is finished and store the PI data in the preset memory.

● TRAFFIC INFORMATION FUNCTION

With this function, traffic information can be received automatically from any mode. This function operates using the RDS TP and TA signals or the ARI SK and DK signals.

To receive traffic information:

1. Press the TUNER/BAND button ⑬ to set the FM mode. (The traffic information function does not operate on the MW and LW bands.)
2. Press the T. INFO button ⑧. The T.INFO indicator ㉟ appears on the display.
   The TP indicator ㉓ lights when a traffic information station is received regardless of the traffic information mode.
3. Press the TUNE switch ③ to set the seek mode. (The SEEK indicator ㉚ appears on the display.)
4. Use the UP or DN switch (㊱ or ㊲) to start searching.
   The set automatically searches for a traffic information station.
   Once the station is tuned in, the TP indicator ㉓ appears on the display.
5. The following appears on the display when traffic information is received:

   T . INFO

   NOTE:
   When a reception signal strength is poor during the traffic information reception, the function which holds the traffic information reception mode works for 20 seconds.
   If no information is received for 20 seconds, the traffic information reception mode is automatically cancelled and the unit returns to the original mode. If a traffic information termination signal is received during the hold period, the unit also returns to the original mode.
6. If traffic information is received while a CD is playing, the CD is automatically paused and the traffic information can be heard. Once the traffic information is over, the set returns to the previous mode.

7. When the reception of the broadcast station currently tuned in becomes poor, the TP indicator ㉓ turns off and the set is set to the following state:
   (1) An alarm is sounded 25 seconds after traffic information stations can no longer be received (the TP indicator ㉓ turns off).
   If a CD is playing, it is paused automatically and the alarm is sounded.
   (2) Use the manual tuning, seek, or auto memory functions to tune in another station.
   (3) When the set is in the seek mode, if the UP or DN button (㊱ or ㊲) is pressed, the set only searches for traffic information stations. It either finds a traffic information station or continues searching until the seek mode is canceled.
8. To search only for traffic information stations:
   (1) Press the TUNE switch ③ for 3 seconds.
   (2) Press the Preset No. 3 button ⑮.
   The display switches between "TP SEEK" and "TP ALARM" each time the Preset No. 3 button ⑮ is pressed.

   TP SEEK ←→ TP ALARM

   (3) Set the display to "TP SEEK" and press the TUNE switch ③.
   - In this mode, the set automatically searches for the traffic information station with the best reception in that area 25 seconds after the traffic information station can no longer be received (after the TP indicator ㉓ turns off).
   - When traffic information stations cannot be received, the previous station is tuned back in. This operation is performed again if traffic information signals cannot be received for 25 seconds. If traffic information is selected, the set may re-tune to a different station broadcasting other programs.
   - Traffic information stations are automatically tuned in even during playback of a CD.
9. The set operates as follows if both the traffic information and A.P.I. modes are set:
   The automatic follow operation is performed for stations broadcasting the same program which are also traffic information broadcast stations.

   When traffic information stations cannot be received:
   In the alarm mode:
   An alarm is sounded after 25 seconds.
   If a CD is playing, it is paused automatically, the alarm is sounded, and the radio mode is set.
   Use the manual tuning, seek, or auto memory functions to tune in another station.
   In the seek mode:
   The set automatically searches for RDS stations which are also traffic information broadcast stations. In this case, it searches for stations broadcasting other programs.
10. If you no longer want to hear traffic information, cancel the traffic information mode to return to normal radio reception.

Disassembly Instructions

1. Removal of the Nosepiece

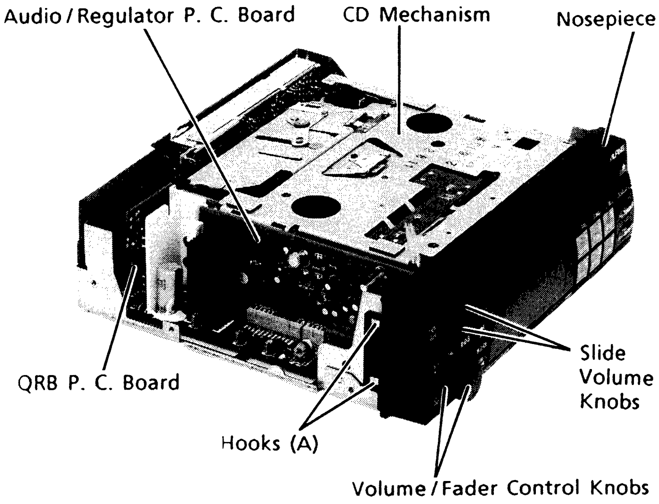
(1) After removal of the Top Cover, remove the Volume/Fader Control Knobs and two Slide Volume Knobs as shown in Figure 1.

(2) Remove five Hooks (A) as shown in Figures 1 and 2.

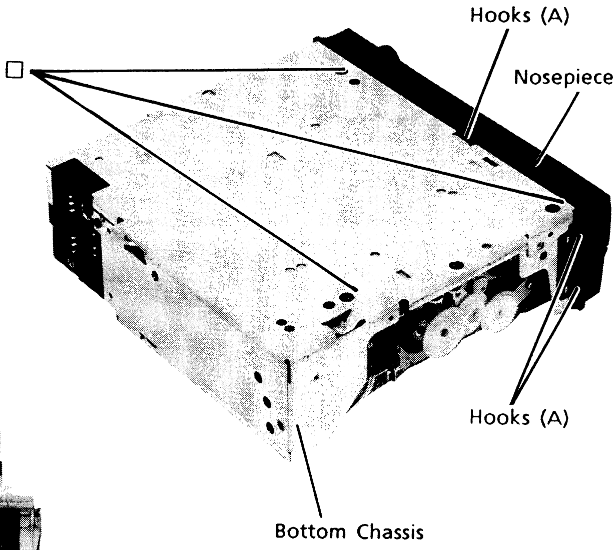
2. Removal of the CD Mechanism

(1) After removal of the Nosepiece and Audio/Regulator P. C. Board, remove five screws marked "☐" as shown in Figures 2 and 3.

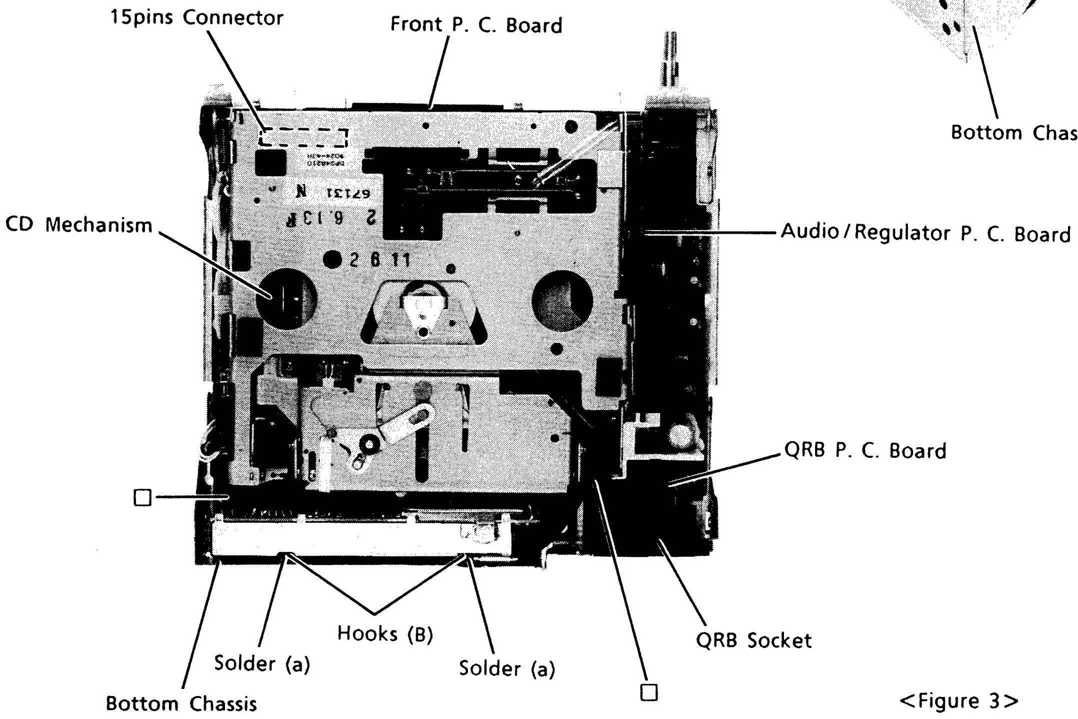
(2) Disconnect two Connectors from the Main P. C. Board.
To remove the CD Mechanism from the Main P. C. Board, pull up the CD Mechanism by little and little.
Give care to the 15-pins Connector which connect two parts not to bend as shown in Figure 3.


Audio/Regulator P. C. Board
CD Mechanism
Nosepiece
QRB P. C. Board
Slide Volume Knobs
Hooks (A)
Volume/Fader Control Knobs

<Figure 1>


Hooks (A)
☐
Nosepiece
Hooks (A)
Bottom Chassis

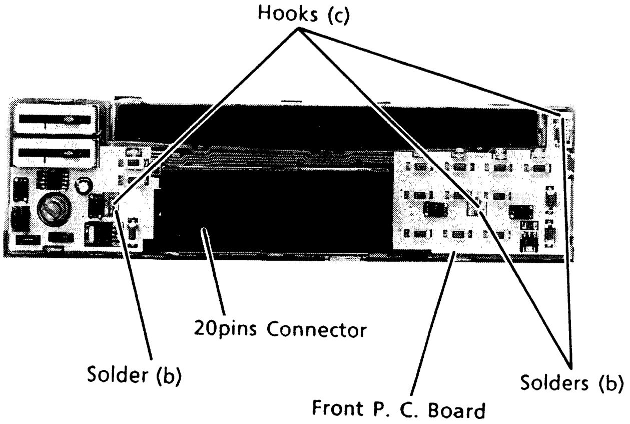
<Figure 2>


15pins Connector
Front P. C. Board
CD Mechanism
Audio/Regulator P. C. Board
QRB P. C. Board
☐
Hooks (B)
Solder (a)
Solder (a)
QRB Socket
Bottom Chassis
☐

<Figure 3>

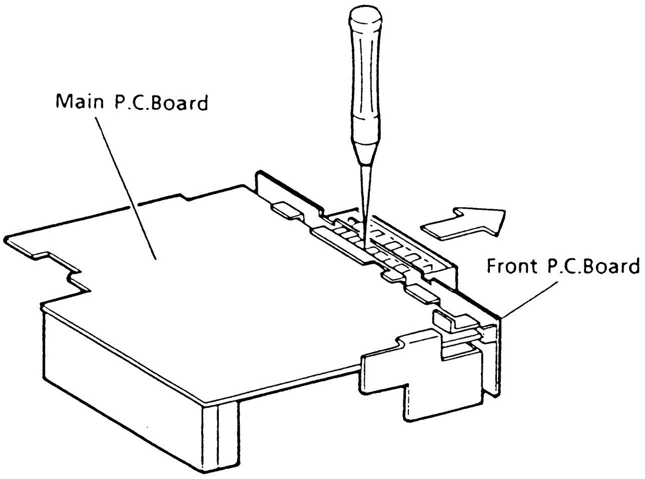
3. Removal of the Front P. C. Board

(1) After removal of the CD Mechanism, remove Solders (b) and three Hooks (C) as shown in Figure 4.
Disconnect the 20-pins Connector from the Main P. C. Board.
To make it easy, insert a thim stick object into an aperture and push out the Front P. C. Board as shown in Figure 5.


Hooks (c)
20pins Connector
Solder (b)
Front P. C. Board
Solders (b)

<Figure 4>

※ Notice for assembly the CD Mechanism and Front P. C. Board into the unit.
Give care to the 20-pins Connector between the Main and the Front P. C. Boards and the 15-pins Connector between the Main P. C. Board and the CD Mechanism not to bend them when assemblying the parts.

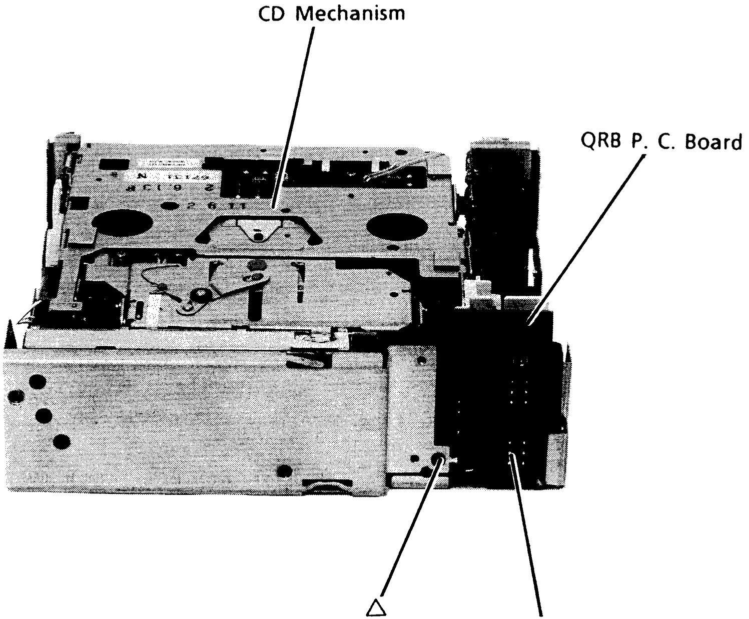

Main P.C.Board
Front P.C.Board

<Figure 5>

4. Removal of the QRB P. C. Board

(1) After removal of the CD Mechanism, remove a Screw marked "△" as shown in Figure 6.

(2) Disconnect the Connector From the Tuner P. C. Board. To removal of the QRB P. C. Board from the Main P. C. Board, pull up the QRB P. C. Board by little and little.



<Figure 6>

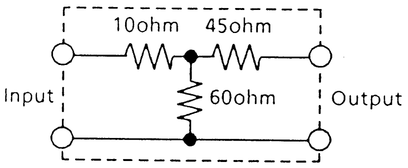
5. Removal of the Bottom Chassis

(1) After removal of the QRB P. C. Board, remove Solders (a) and two Hooks (B) as shown in Figure 3.

Adjustment Procedures

1. FM Section

(1) Dummy Antenna Circuit


10ohm
45ohm
Input
60ohm
Output

For 50ohm FM Signal Generator

Figure 7

(2) Connections

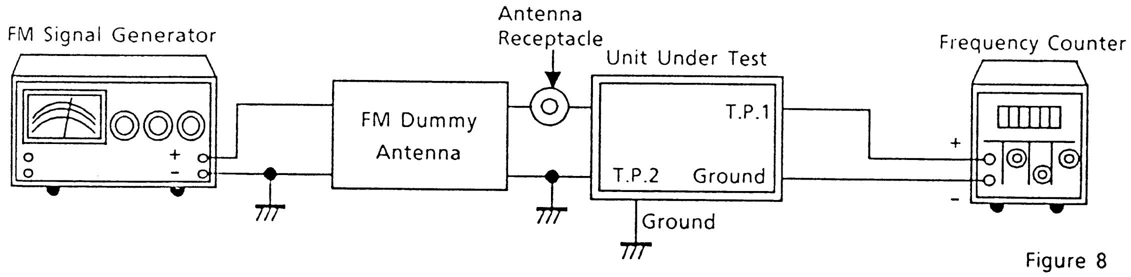

FM Signal Generator
+
-
FM Dummy Antenna
Antenna Receptacle
Unit Under Test
T.P.1
T.P.2
Ground
Ground
Frequency Counter
+
-

Figure 8

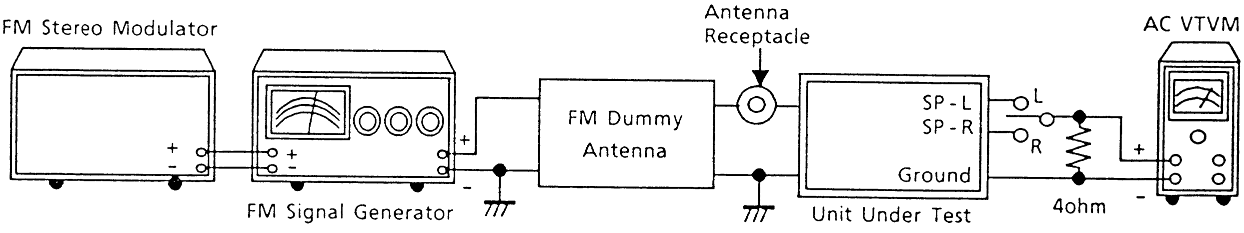

FM Stereo Modulator
+
-
FM Signal Generator
+
-
FM Dummy Antenna
Antenna Receptacle
SP-L
SP-R
Ground
Unit Under Test
L
R
4ohm
AC VTVM
+
-

Figure 9

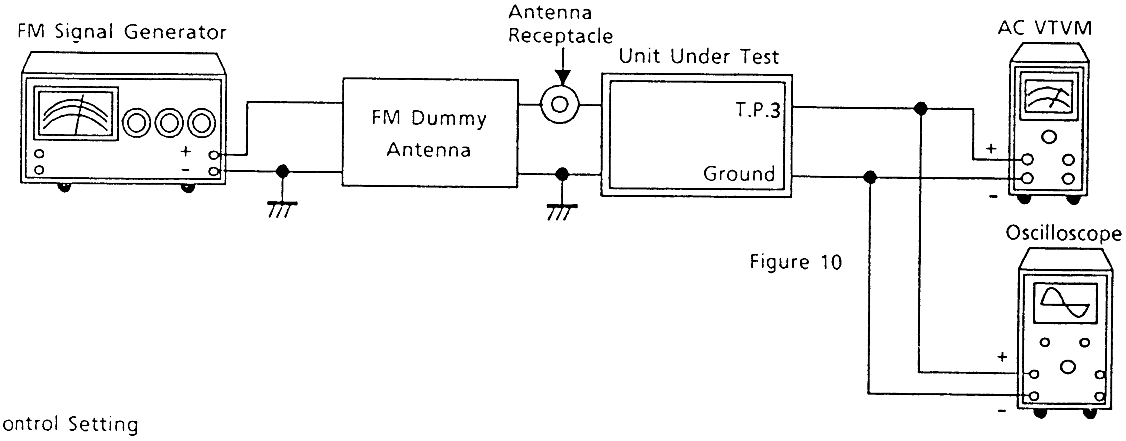
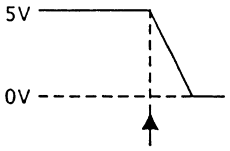

FM Signal Generator
+
-
FM Dummy Antenna
Antenna Receptacle
Unit Under Test
T.P.3
Ground
AC VTVM
+
-
Oscilloscope
+
-

Figure 10

(3) Control Setting

Power Switch	ON
Fader Control	Front
Balance Control	Mechanical Center
Treble/Bass Control	Mechanical Center
Band Switch	FM
Others	OFF

(4) Adjustment Procedures

Step	Description	Connection	Signal Generator	Dial Control	Test Point	Adjustment
1	VCO Adjustment	Figure 8	98.1MHz 72dB (400Hz Mod. 22.5kHz Dev.)	98.1MHz	T.P.1	Adjust VR002 to read 19±0.05kHz on Counter at T.P.1.
2	Stereo Separation Adjustment (L)	Figure 9	98.1MHz 72dB (Stereo 1kHz Mod. L only)	98.1MHz	Speaker Output	Adjust VR003 for Rch output to be minimumand confirm Lch and Rch output level difference is more than 25dB.
3	Stereo Blend Adjustment (L)	Figure 9	98.1MHz 46dB±3dB (Stereo 1kHz Mod. L only)	98.1MHz	Speaker Output	Adjust VR004 for Lch and Rch output level difference to be 8dB.
4	Stereo Separation Adjustment (R)	Figure 9	98.1MHz 72dB (Stereo 1kHz Mod. R only)	98.1MHz	Speaker Output	Proceed same adjustment under Step 2 by alternating Lch and Rch.
5	Stereo Blend Adjustment (R)	Figure 9	98.1MHz 46dB±3dB (Sterec 1kHz Mod. R only)	98.1MHz	Speaker Output	Proceed same adjustment under Step 3.
6	RDS Adjustment	Figure 10	98.1MHz 47dB (Mod.: OFF)	98.1MHz	T.P.3	Adjust VR005 so that output waveform at T.P.3 changes High level (5V) to Low level (0V) as shown in figure below. Output Waveform at T.P.3  Stop (VR005 adjustment should be stopped at this position.)

2 Compact Disc SECTION

(1) Connections

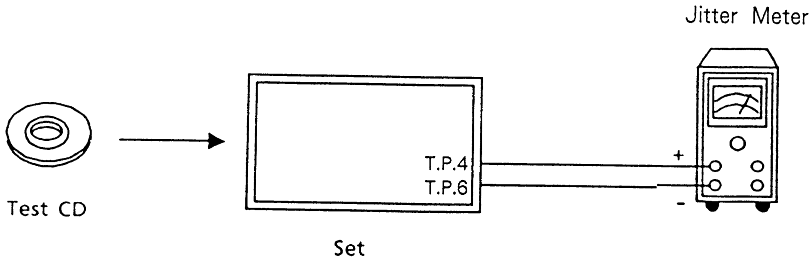

Jitter Meter
Test CD
T.P.4
T.P.6
+
-
Set

Figure 11

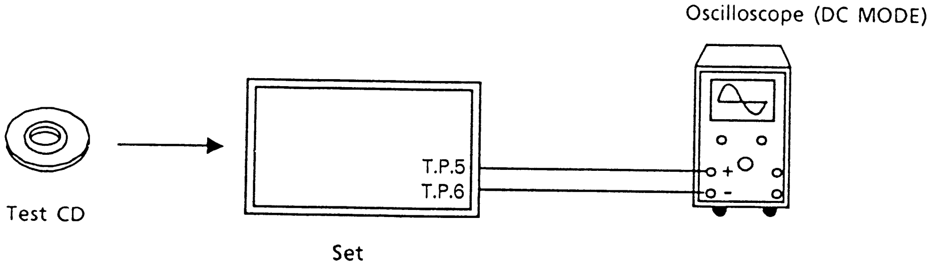

Oscilloscope (DC MODE)
Test CD
T.P.5
T.P.6
+
-
Set

Figure 12

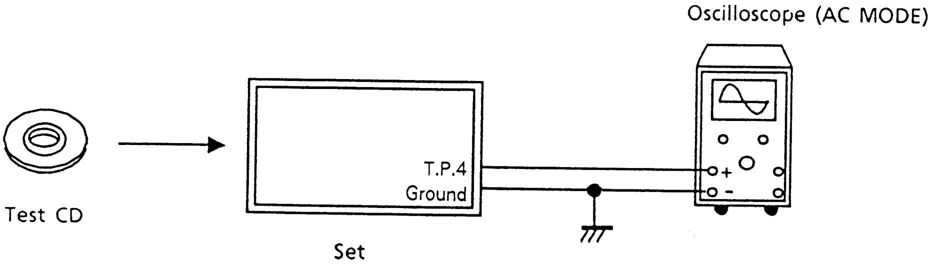

Oscilloscope (AC MODE)
Test CD
T.P.4
Ground
+
-
Set

Figure 13

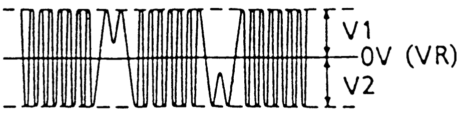
(2) Control Settings

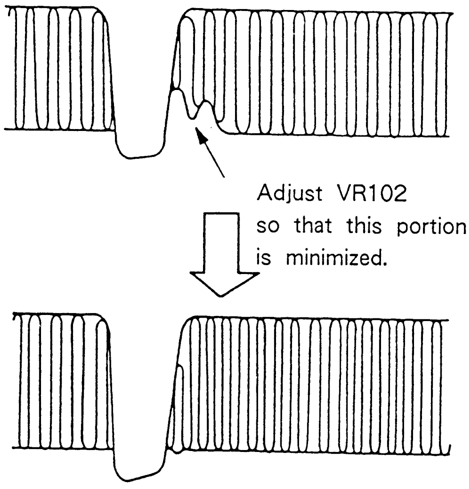
Power SW	ON
Fader Control	Front
Balance Control	Mechanical Center
Treble / Bass Control	Mechanical Center
Others	OFF

(3) The necessaries for adjustment

DP - S Extension Cord
Assy., EX Cord Kit for DP2 Mechanism
Part No. 01V00282S01
See Adjustment Locations (Figure 14)

(4) Adjustment Procedures

Step	Description	Test CD	Connection	Test Point	Adjustment Point	Adjustment
1	Jitter Adjustment	TCD782 Track No. 1 (A-BEX)	Figure 11	T.P.4 T.P.6	VR103	①:Set the mode to playback with the test disc loaded. ②:Using the jitter meter, measure the T.P.4 signal. ③:First, rotate VR103 fully counter-clockwise. ④:Next, carefully rotate VR103 clockwise until the jitter meter shows a minimum value and then increases by +0.5nS from the minimum value.
2	Tracking Balance Adjustment	TCD782 Track No. 8 (A-BEX)	Figure 12	T.P.5 T.P.6	VR101	①:Set the mode to playback with the test disc loaded. ②:Use wire to connect T.P.6 to T.P.7. ③:Using the oscilloscope, measure the T.P.5 signal in reference to VR. (VR standard=0V) ④:Adjust VR101 so that the positive and negative deflection widths of the T.P.5 signal are at the same level, relative to VR (0V) (The entire waveform moves up and down.)  V1 = V2 ⑤:After adjustment, remove the wire connecting to T.P.6 to T.P.7.

Step	Description	Test CD	Connection	Test Point	Adjustment Point	Adjustment
3	Tracking Offset Adjustment	TCD721 Track No. 6 (A-BEX)	Figure 13	T.P.4	VR102	① :Set the mode to playback with the test disc loaded. ② :Using the oscilloscope, measure the T.P.4 signal. ③ :Adjust VR102 in order to minimize the waveform induced by the reaction to the omission of the T.P.4 signal. ④ :Conduct the tracking balance adjustment once again.  Adjust VR102 so that this portion is minimized.

Adjustment Locations

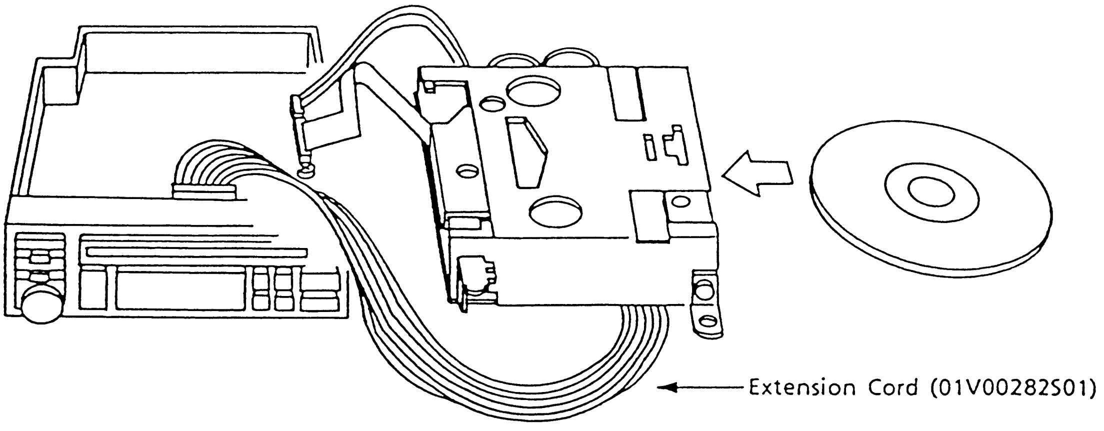

Extension Cord (01V00282S01)

Figure 14

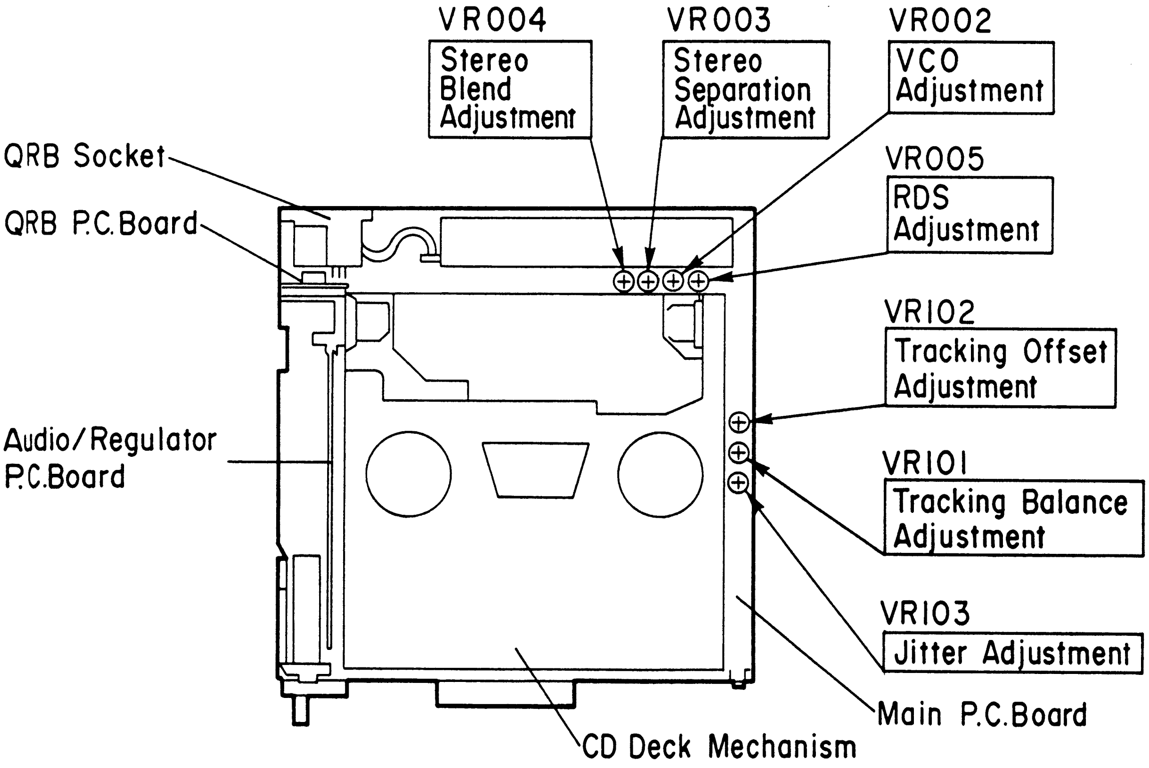
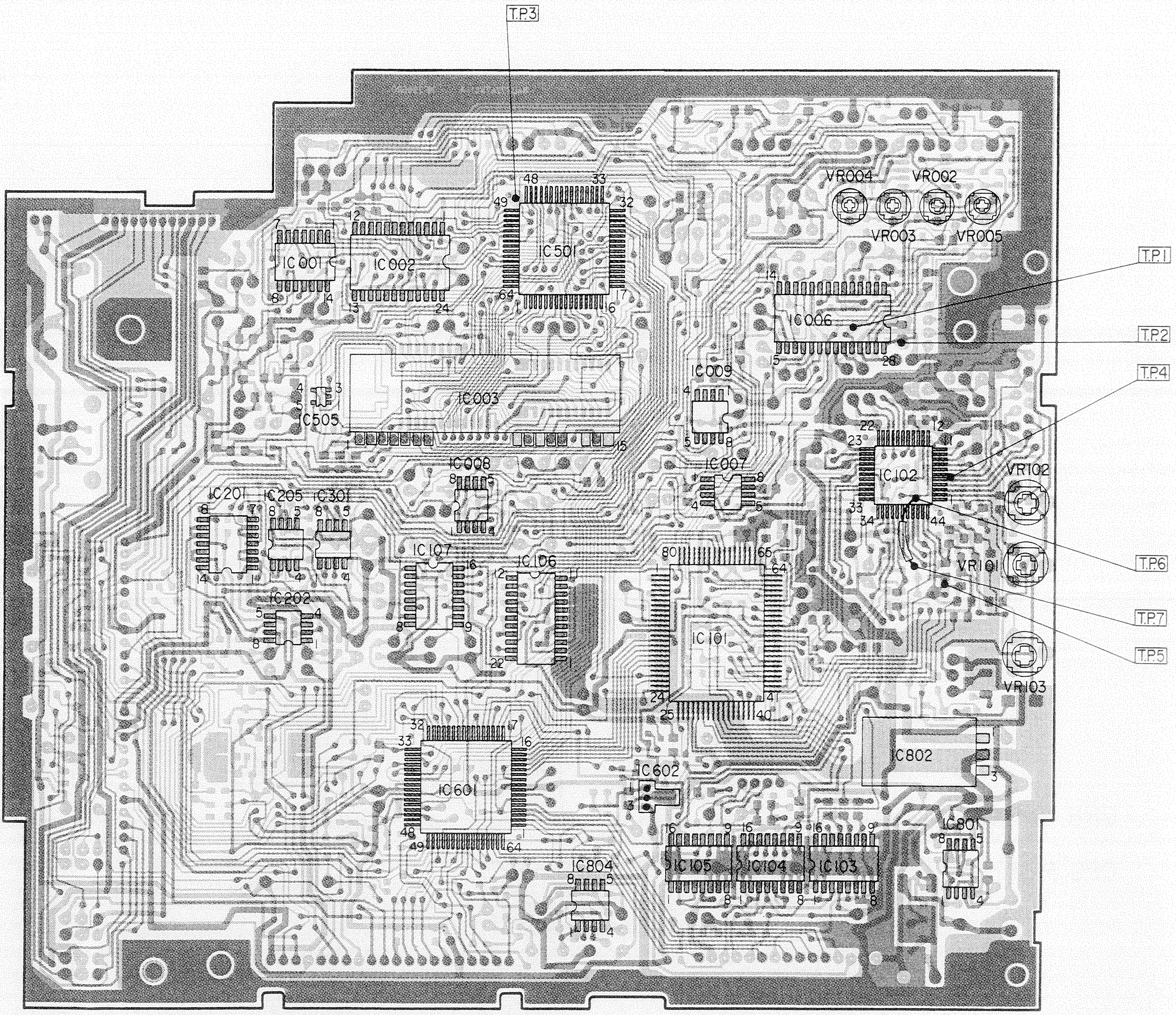
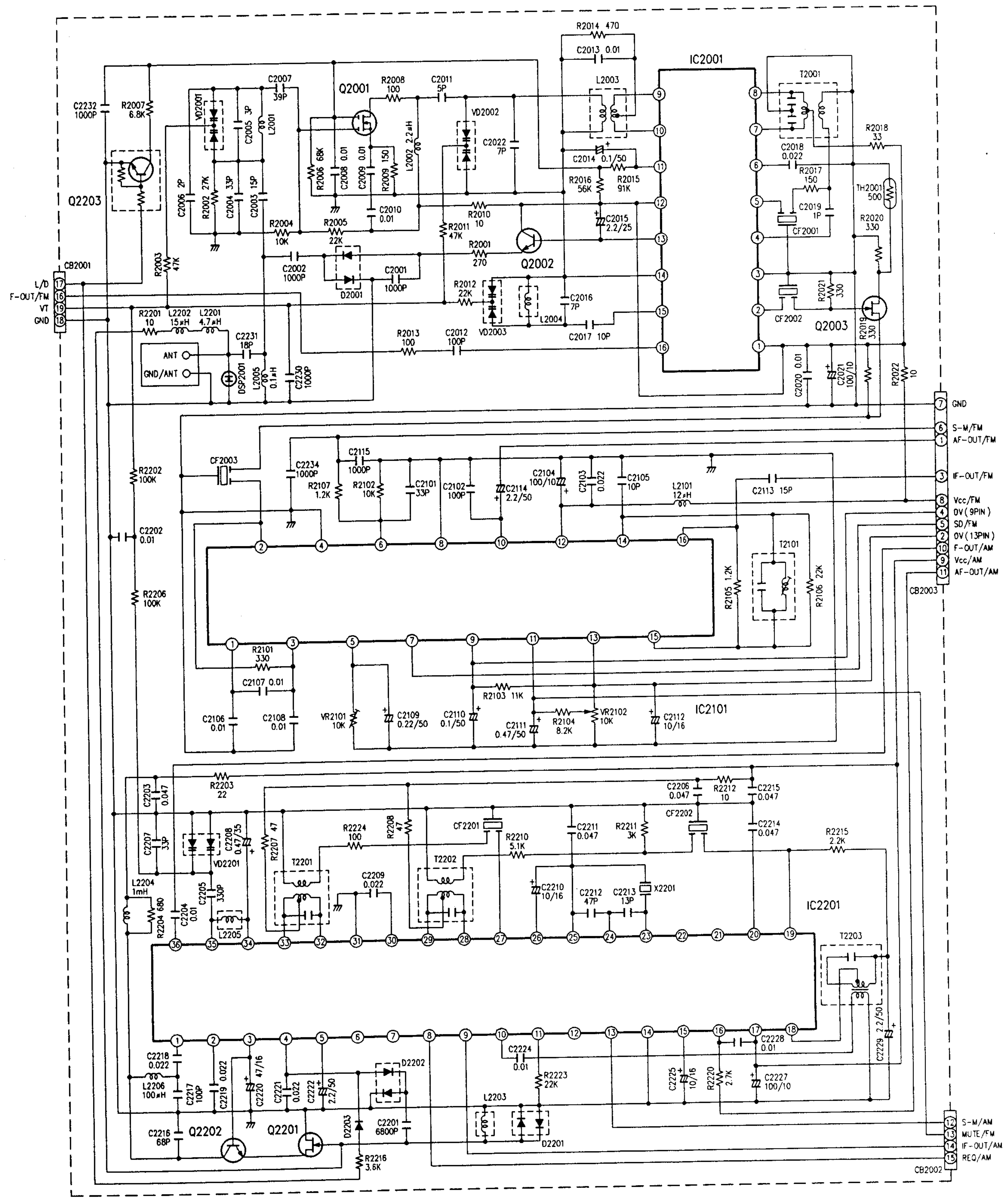

VR004
Stereo Blend Adjustment
VR003
Stereo Separation Adjustment
VR002
VCO Adjustment
VR005
RDS Adjustment
VR102
Tracking Offset Adjustment
VR101
Tracking Balance Adjustment
VR103
Jitter Adjustment
QRB Socket
QRB P.C.Board
Audio/Regulator P.C.Board
Main P.C.Board
CD Deck Mechanism

Figure 15

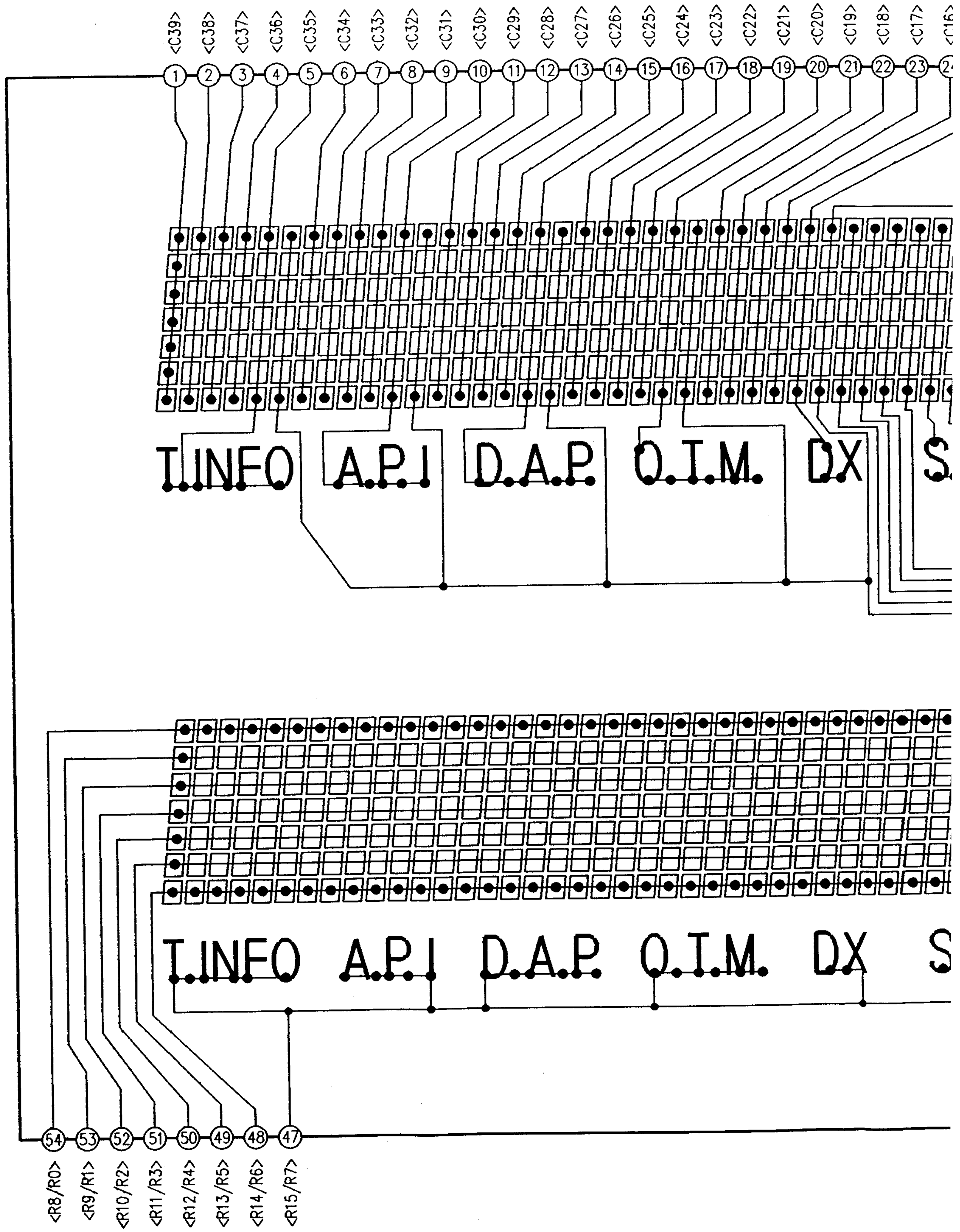

T.P.3
T.P.1
T.P.2
T.P.4
T.P.6
T.P.7
T.P.5
VR004
VR002
VR003
VR005
VR102
VR101
VR103
IC001
IC002
IC501
IC003
IC505
IC006
IC009
IC007
IC008
IC102
IC201
IC205
IC301
IC202
IC107
IC106
IC101
IC601
IC602
IC802
IC801
IC804
IC105
IC104
IC103

Main P. C. Board (Component Side)

Tuner Schematic Diagram


IC2001
IC2101
IC2201
Q2001
Q2002
Q2003
Q2201
Q2202
Q2203
CB2001
CB2002
CB2003
L/D
F-OUT/FM
VT
GND
ANT
GND/ANT
DSP2001
R2014 470
C2013 0.01
L2003
T2001
R2008 100
C2011 5P
C2007 39P
VD2001
VD2002
VD2003
C2022 7P
C2014 0.1/50
R2016 56K
R2015 91K
C2015 2.2/25
R2010
R2011 10
R2001 270
R2012 22K
C2016 7P
L2004
C2017 10P
R2013 100
C2012 100P
R2018 33
C2018 0.022
R2017 150
C2019 1P
CF2001
CF2002
TH2001 500
R2020 330
R2021 330
R2019 330
R2022 10
C2020 0.01
C2021 100/10
C2232 1000P
R2007 6.8K
C2005 3P
L2001
R2006 68K
C2008 0.01
C2009 0.01
R2009 150
L2002 2.2μH
C2010 0.01
C2006 2P
R2002 27K
C2004 33P
C2003 15P
R2004 10K
R2005 22K
R2003 47K
C2002 1000P
D2001
C2001 1000P
R2201 10
L2202 15μH
L2201 4.7μH
C2231 18P
L2005 0.1μH
C2230 1000P
GND
S-M/FM
AF-OUT/FM
IF-OUT/FM
Vcc/FM
0V (9PIN)
SD/FM
0V (13PIN)
F-OUT/AM
Vcc/AM
AF-OUT/AM
CF2003
C2234 1000P
R2107 1.2K
C2115 1000P
R2102 10K
C2101 33P
C2102 100P
C2114 2.2/50
C2104 100/10
C2103 0.022
C2105 10P
L2101 12μH
C2113 15P
T2101
R2105 1.2K
R2106 22K
R2202 100K
C2202 0.01
R2206 100K
R2101 330
C2107 0.01
C2106 0.01
C2108 0.01
VR2101 10K
C2109 0.22/50
C2110 0.1/50
R2103 11K
C2111 0.47/50
R2104 8.2K
VR2102 10K
C2112 10/16
C2203 0.047
R2203 22
C2207 33P
VD2201
C2208 0.47/35
R2207 47
R2224 100
R2208 47
CF2201
R2210 5.1K
C2211 0.047
R2211 3K
C2206 0.047
R2212 10
C2215 0.047
CF2202
C2214 0.047
R2215 2.2K
T2201
T2202
C2209 0.022
C2210 10/16
C2212 47P
C2213 13P
X2201
L2204 1mH
R2204 680
C2204 0.01
C2205 330P
L2205
T2203
C2218 0.022
L2206 100μH
C2217 100P
C2219 0.022
C2220 47/16
C2221 0.022
C2222 2.2/50
D2203
D2202
C2224 0.01
R2223 22K
L2203
D2201
C2201 6800P
C2225 10/16
R2220 2.7K
C2228 0.01
C2227 100/10
C2229 2.2/50
C2216 68P
R2216 3.6K
S-M/AM
MUTE/FM
IF-OUT/AM
REQ/AM

FL Display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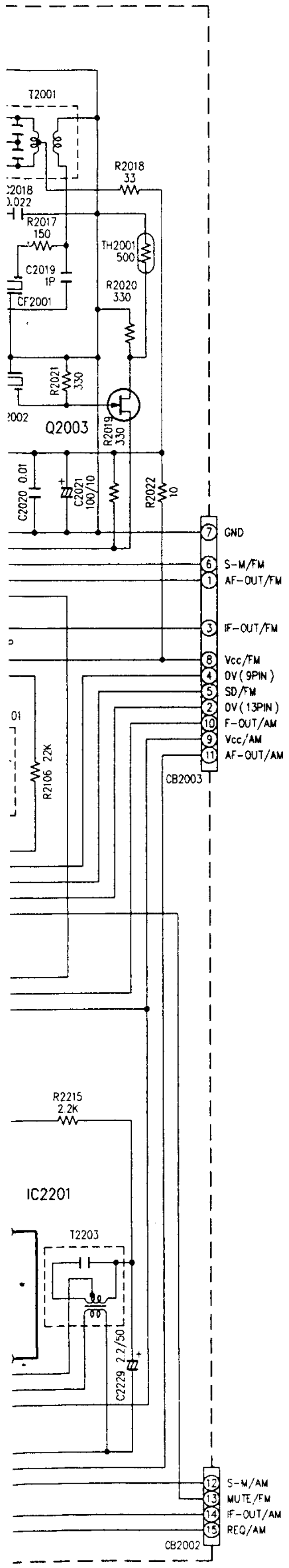
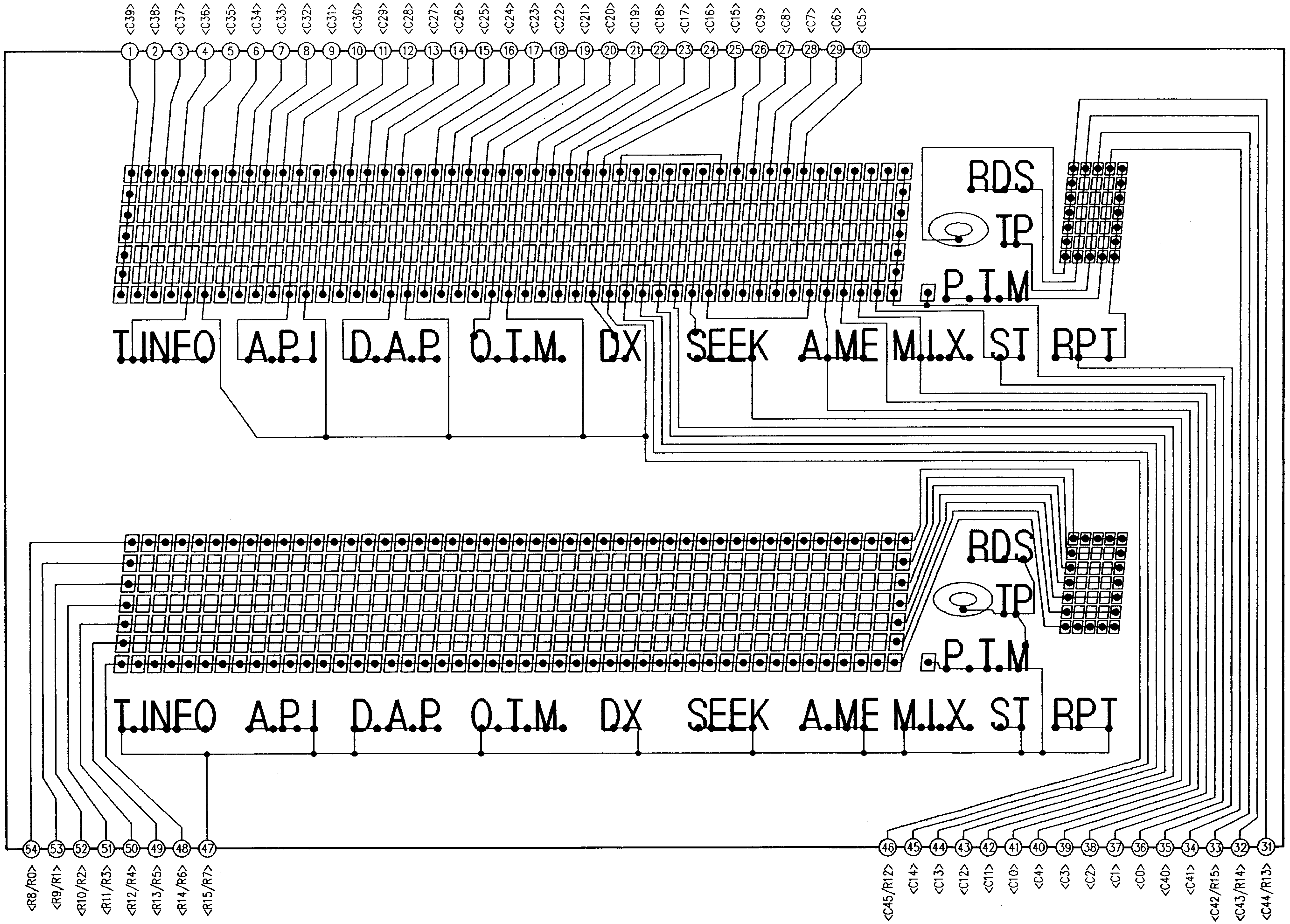
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
T.INFO
A.P.I
D.A.P.
O.T.M.
DX
T.INFO
A.P.I
D.A.P.
O.T.M.
DX
54
53
52
51
50
49
48
47
<R8/R0>
<R9/R1>
<R10/R2>
<R11/R3>
<R12/R4>
<R13/R5>
<R14/R6>
<R15/R7>


T2001
R2018
33
C2018
0.022
R2017
150
C2019
1P
CF2001
TH2001
500
R2020
330
R2021
330
Q2003
R2019
330
C2020 0.01
C2021
100/10
R2022
10
GND
S-M/FM
AF-OUT/FM
IF-OUT/FM
Vcc/FM
0V (9PIN)
SD/FM
0V (13PIN)
F-OUT/AM
Vcc/AM
AF-OUT/AM
CB2003
R2106 22K
R2215
2.2K
IC2201
T2203
C2229 2.2/50
S-M/AM
MUTE/FM
IF-OUT/AM
REQ/AM
CB2002

FL Display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RDS
TP
P.T.M
T.INFO
A.P.I
D.A.P.
O.T.M.
DX
SEEK
A.ME
M.I.X.
ST
RPT
<R8/R0>
<R9/R1>
<R10/R2>
<R11/R3>
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<R13/R5>
<R14/R6>
<R15/R7>
<C45/R12>
<C14>
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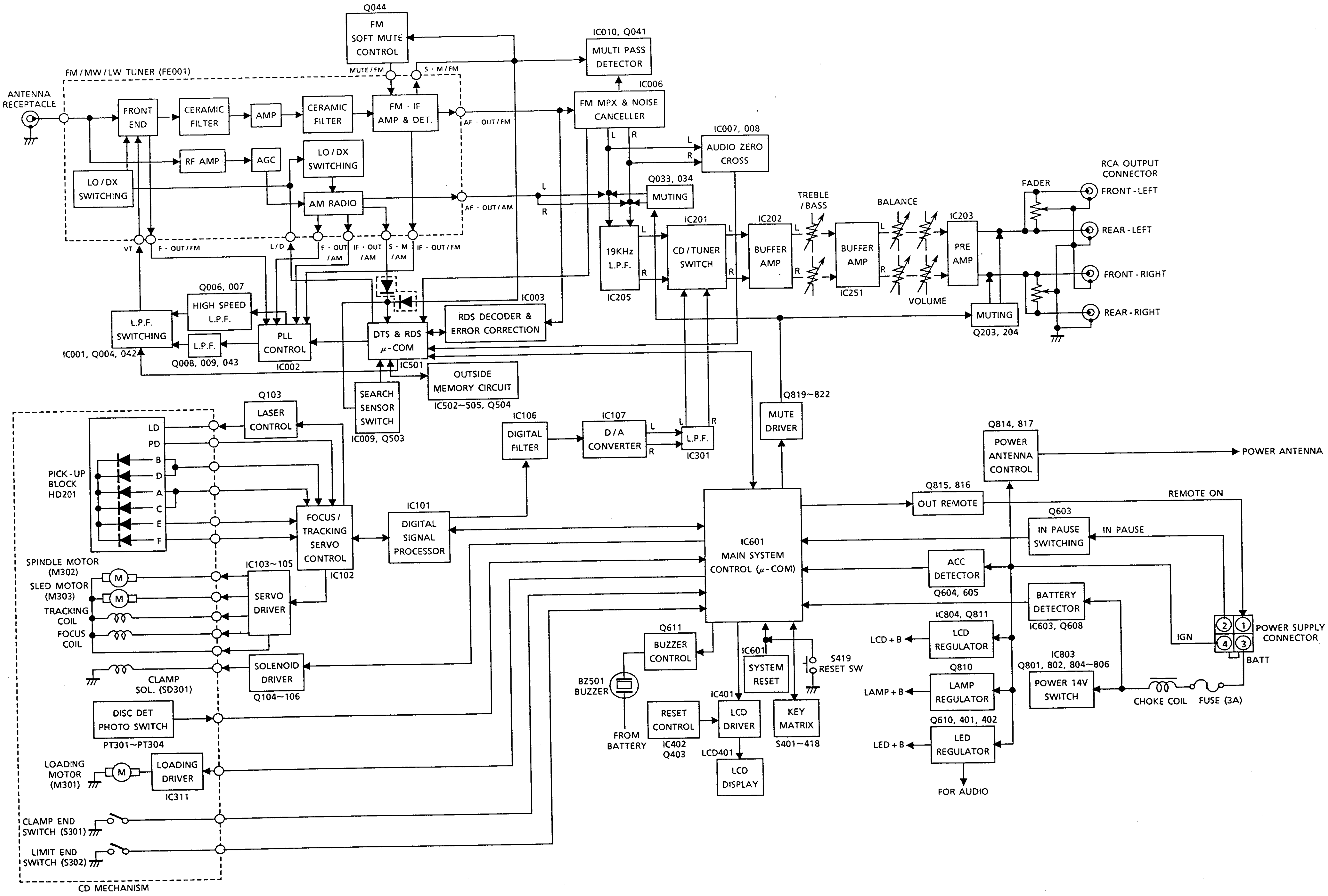
<C11>
<C10>
<C4>
<C3>
<C2>
<C1>
<C0>
<C40>
<C41>
<C42/R15>
<C43/R14>
<C44/R13>

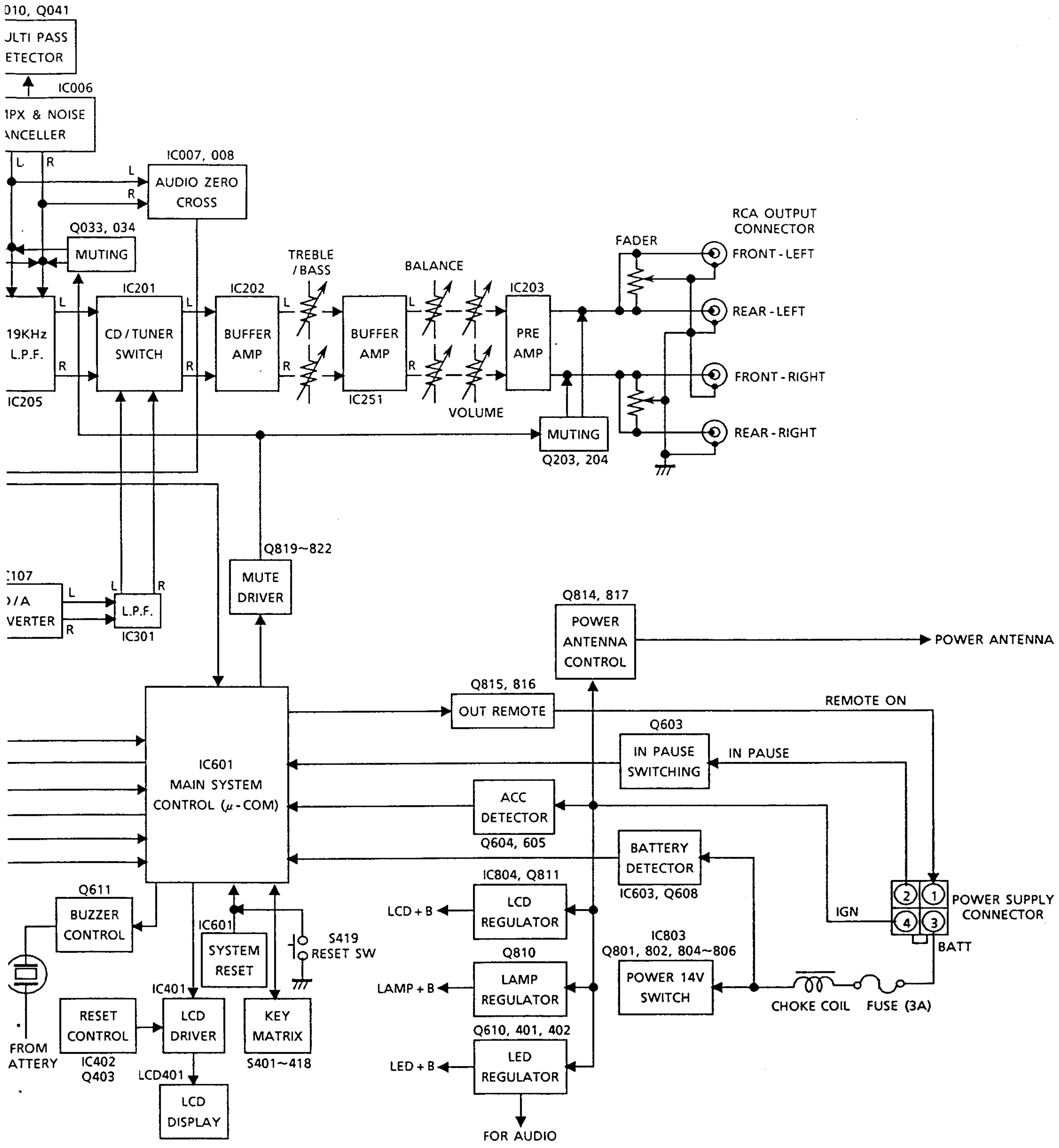
Block Diagram


Q044
FM SOFT MUTE CONTROL
MUTE/FM
S·M/FM
IC010, Q041
MULTI PASS DETECTOR
FM/MW/LW TUNER (FE001)
ANTENNA RECEPTACLE
FRONT END
CERAMIC FILTER
AMP
CERAMIC FILTER
FM · IF AMP & DET.
AF · OUT/FM
IC006
FM MPX & NOISE CANCELLER
L
R
IC007, 008
AUDIO ZERO CROSS
RF AMP
AGC
LO/DX SWITCHING
LO/DX SWITCHING
AM RADIO
AF · OUT/AM
Q033, 034
MUTING
VT
F · OUT/FM
L/D
F · OUT/AM
IF · OUT/AM
S · M/AM
IF · OUT/FM
19KHz L.P.F.
IC205
IC201
CD/TUNER SWITCH
IC202
BUFFER AMP
TREBLE/BASS
BUFFER AMP
IC251
BALANCE
VOLUME
IC203
PRE AMP
FADER
RCA OUTPUT CONNECTOR
FRONT-LEFT
REAR-LEFT
FRONT-RIGHT
REAR-RIGHT
MUTING
Q203, 204
Q006, 007
HIGH SPEED L.P.F.
L.P.F. SWITCHING
L.P.F.
IC001, Q004, 042
Q008, 009, 043
PLL CONTROL
IC002
IC003
RDS DECODER & ERROR CORRECTION
DTS & RDS μ-COM
IC501
OUTSIDE MEMORY CIRCUIT
IC502~505, Q504
SEARCH SENSOR SWITCH
IC009, Q503
Q103
LASER CONTROL
LD
PD
B
D
A
C
E
F
PICK-UP BLOCK HD201
FOCUS/TRACKING SERVO CONTROL
IC102
IC101
DIGITAL SIGNAL PROCESSOR
IC106
DIGITAL FILTER
IC107
D/A CONVERTER
L.P.F.
IC301
Q819~822
MUTE DRIVER
SPINDLE MOTOR (M302)
SLED MOTOR (M303)
TRACKING COIL
FOCUS COIL
IC103~105
SERVO DRIVER
CLAMP SOL. (SD301)
SOLENOID DRIVER
Q104~106
DISC DET PHOTO SWITCH
PT301~PT304
LOADING MOTOR (M301)
LOADING DRIVER
IC311
CLAMP END SWITCH (S301)
LIMIT END SWITCH (S302)
CD MECHANISM
IC601
MAIN SYSTEM CONTROL (μ-COM)
Q611
BUZZER CONTROL
BZ501 BUZZER
FROM BATTERY
RESET CONTROL
IC402 Q403
IC401
LCD DRIVER
LCD401
LCD DISPLAY
IC601
SYSTEM RESET
KEY MATRIX
S401~418
S419 RESET SW
Q814, 817
POWER ANTENNA CONTROL
POWER ANTENNA
Q815, 816
OUT REMOTE
REMOTE ON
Q603
IN PAUSE SWITCHING
IN PAUSE
ACC DETECTOR
Q604, 605
BATTERY DETECTOR
IC603, Q608
IC804, Q811
LCD+B
LCD REGULATOR
Q810
LAMP+B
LAMP REGULATOR
Q610, 401, 402
LED+B
LED REGULATOR
FOR AUDIO
IC803
Q801, 802, 804~806
POWER 14V SWITCH
CHOKE COIL
FUSE (3A)
IGN
POWER SUPPLY CONNECTOR
BATT
①
②
③
④

Descriptio

● 35087W02 : IC00

No.	Symbol
1	ARI−SK LE
2	ARI−DK LI
3	RDS LED
4	D • GND
5	CLOCK OU
6	DATA OUT
7	DATA STA
8	NC
9	$\overline{\text{RES}}$
10	1/2 Vcc
11	OSC
12	FM+5V
13	A • GND
14	INPUT
15	FM+B


010, Q041
JLTI PASS
ETECTOR
IC006
IPX & NOISE
ANCELLER
IC007, 008
AUDIO ZERO CROSS
Q033, 034
MUTING
L
R
19KHz L.P.F.
IC205
IC201
CD/TUNER SWITCH
IC202
BUFFER AMP
TREBLE /BASS
BUFFER AMP
IC251
BALANCE
VOLUME
IC203
PRE AMP
FADER
MUTING
Q203, 204
RCA OUTPUT CONNECTOR
FRONT-LEFT
REAR-LEFT
FRONT-RIGHT
REAR-RIGHT
Q819~822
MUTE DRIVER
:107
)/A
VERTER
L.P.F.
IC301
Q814, 817
POWER ANTENNA CONTROL
POWER ANTENNA
Q815, 816
OUT REMOTE
REMOTE ON
IC601
MAIN SYSTEM CONTROL (μ-COM)
Q603
IN PAUSE SWITCHING
IN PAUSE
ACC DETECTOR
Q604, 605
BATTERY DETECTOR
IC603, Q608
IGN
POWER SUPPLY CONNECTOR
BATT
IC804, Q811
LCD + B
LCD REGULATOR
Q810
LAMP + B
LAMP REGULATOR
Q610, 401, 402
LED + B
LED REGULATOR
FOR AUDIO
IC803
Q801, 802, 804~806
POWER 14V SWITCH
CHOKE COIL
FUSE (3A)
Q611
BUZZER CONTROL
IC601
SYSTEM RESET
S419
RESET SW
IC401
LCD DRIVER
KEY MATRIX
S401~418
RESET CONTROL
IC402
Q403
LCD401
LCD DISPLAY
FROM
ATTERY

Description of IC Terminals

● 35087W02 : IC003

No.	Symbol	I/O	Terminal Description
1	ARI−SK LED	O	SK signal output.
2	ARI−DK LED	O	DK signal output.
3	RDS LED	O	RDS signal output.
4	D • GND	−	Digital GND.
5	CLOCK OUT	O	RDS clock output.
6	DATA OUT	O	RDS data output.
7	DATA START	O	RDS data start output.
8	NC	−	Open.
9	$\overline{\text{RES}}$	I	Reset input.
10	1/2 Vcc	−	Internal band pass filter power supply, 1/2 Vcc.
11	OSC	I	To connect OSC.
12	FM+5V	−	+5V RDS decorder power supply.
13	A • GND	−	Power GND.
14	INPUT	I	FM signal input.
15	FM+B	−	Internal band pass filter power supply.

● 25699W23 : IC501

No.	Symbol	I/O	Terminal Description
1	$\overline{\text{RD}}$	O	S. RAM CE1 control output.
2	FM LEVEL	O	FM level control output.
3	$\overline{\text{DTS MUTE}}$	O	Audio mute output.
4	$\overline{\text{7071 RESET}}$	O	LC7071 reset output.
5	50K REF	O	High output when REF frequency becomes 50kHz in FM mode.
6	$\overline{\text{RESET}}$	I	System reset input Low : Reset.
7	X2	O	OSC output for system clock.
8	X1	I	OSC input for system clock.
9	V_{SS}	–	GND
10	A15	O	S. RAM CE1 control output.
11	A14	O	S. RAM CE1 control output.
12	NC		Open.
13	NC		Open.
14	NC		Open.
15	AD10	O	S. RAM control output.
16	AD9	O	S. RAM control output.
17	AD8	O	S. RAM control output.
18	AD7	I/O	S. RAM communication data input and output.
19	AD6	I/O	S. RAM communication data input and output.
20	AD5	I/O	S. RAM communication data input and output.
21	AD4	I/O	S. RAM communication data input and output.
22	AD3	I/O	S. RAM communication data input and output.
23	AD2	I/O	S. RAM communication data input and output.
24	V_{SS}	–	GND
25	AD1	I/O	S. RAM communication data input and output.
26	AD0	I/O	S. RAM communication data input and output.
27	A STBY	O	LE control output for latch.
28	DTS STBY	I	DTS standby resumption input.
29	RDS CLOCK	I	RDS clock input.
30	RDS DATA START	I	RDS data start input.
31	RDS DATA	I	RDS data input.
32	PLL DATA IN	I	PLL data input.
33	AUDIO IN	I	Audio zero cross input.
34	DTS START	I	DTS data start.
35	DTS COMMAND	I	Command input for DTS.
36	NC	–	Open.
37	NC	–	Open.
38	DTS CLOCK	I	Communication clock input for DTS.
39	DTS STATUS	O	Status output from DTS.
40	$\overline{\text{EQ}}$	–	Power supply.
41	V_{DD}	–	Power supply.
42	A V_{SS}	–	GND for A/D convertor.
43	A V_{REF}	I	Reference voltage input for A/D converter.
44	$\overline{\text{ST}}$	I	Stereo signal input.

No.	Symbol	I/O	Terminal Description
45	$\overline{\text{SK}}$	I	SK signal input.
46	$\overline{\text{RDS}}$	I	RDS signal input.
47	$\overline{\text{DK}}$	I	DK signal input.
48	$\overline{\text{SEARCH}}$	I	SEARCH start detection input.
49	S. METER	I	Signal meter input.
50	NC	–	Open.
51	PLL CE	O	PLL CE control output.
52	PLL CLOCK	O	Sync signal output for PLL.
53	PLL DATA OUT	O	Data output for PLL.
54	$\overline{\text{LPF SW}}$	O	LPF switch control output.
55	IF MUTE	O	IF mute output.
56	NC	–	Open.
57	NC	–	Open.
58	LW	O	LW band switch output.
59	FM/$\overline{\text{AM}}$	O	FM/AM band switch output.
60	L/$\overline{\text{D}}$	O	SEEK sensitivity switch control output.
61	MONO	O	Stereo/Mono switch control output.
62	DTS CE	I	CE control signal input to DTS.
63	SD	I	Station detector signal input.
64	$\overline{\text{WE}}$	O	S. RAM $\overline{\text{WE}}$ control signal switch.

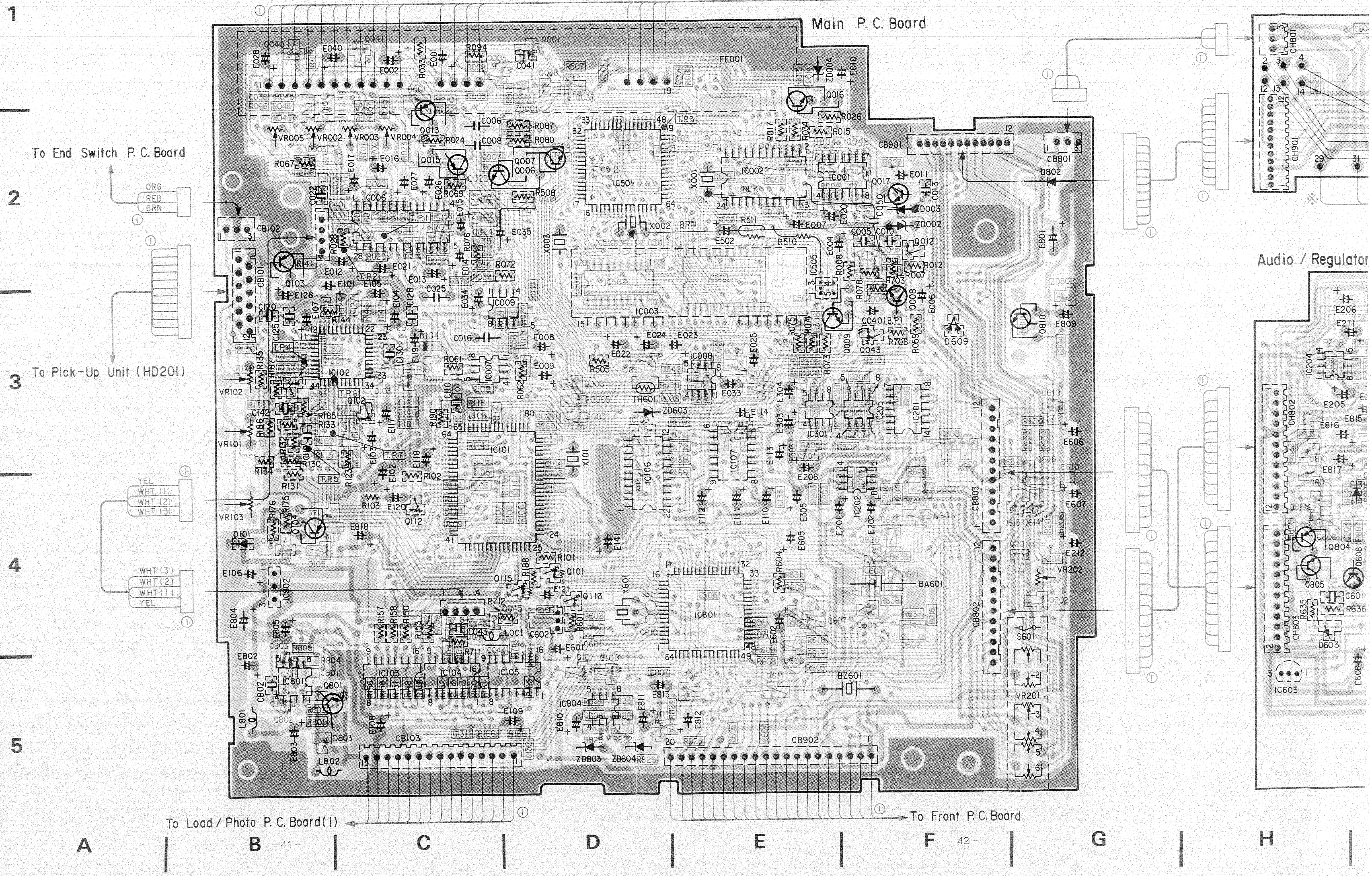
●25699W17 : IC601

No.	Symbol	I/O	Terminal Description
1	DISC IN	I	Disc insert sensor input.
2	LOAD POW	O	Loading eject driver sensor power supply control.
3	LOAD FOR	O	Loading motor forward rotation output.
4	LOAD REV	O	Loading motor inverse rotation output.
5	SOL	O	Clamp switching solenoid drive output.
6	$\overline{\text{RESET}}$	I	System reset input.
7	X2	O	OSC output for system clock.
8	X1	I	OSC input for system clock.
9	Vss	–	GND.
10	D-CE	O	CE output for DTS.
11	LOCK	I	Lock status input terminal.
12	BUCK	O	Clock output to servo controller.
13	DA/CO	I/O	Control I/O to servo controller.
14	BUS3	I/O	Command data 3 to servo controller.
15	BUS2	I/O	Command data 2 to servo controller.

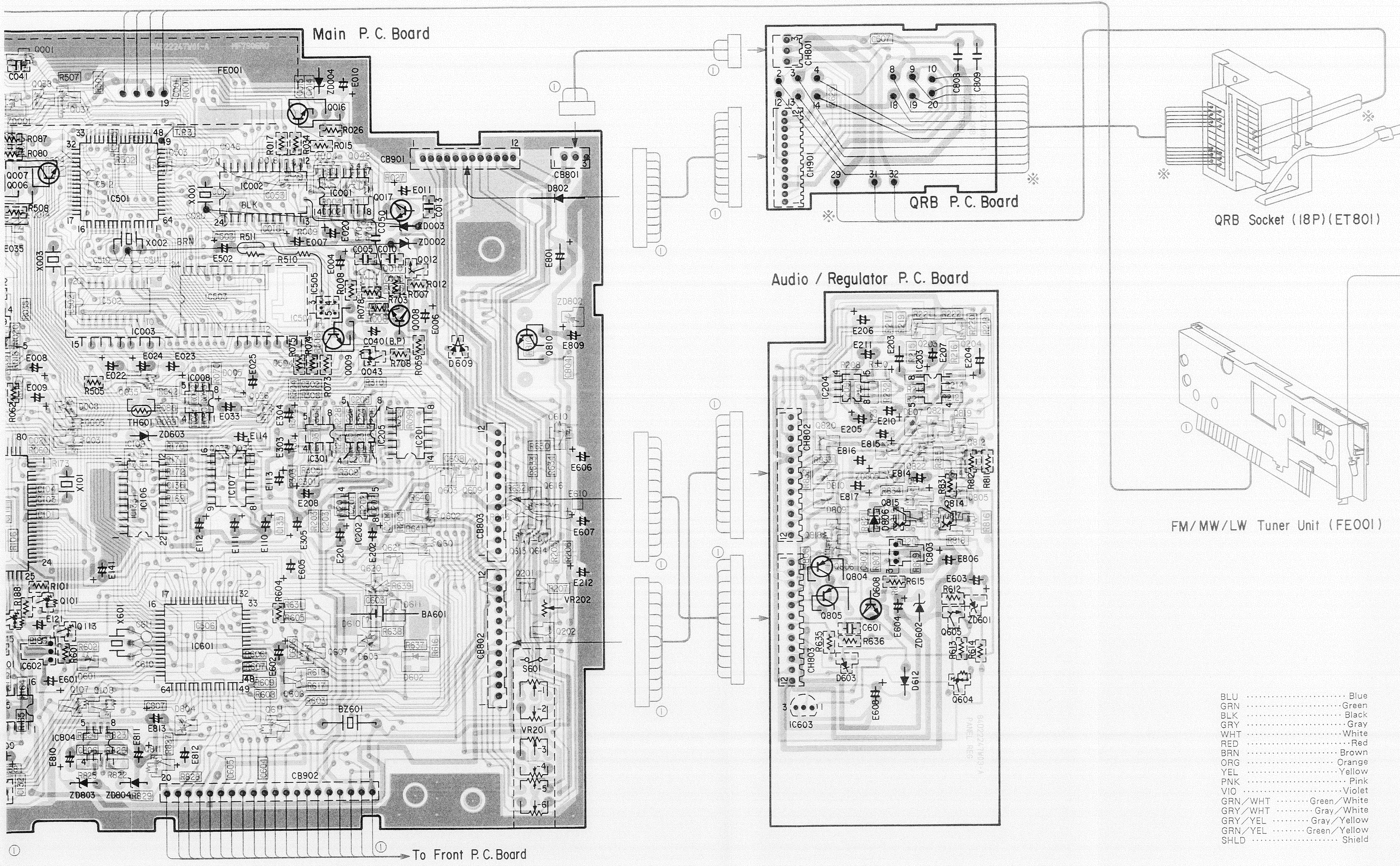
No.	Symbol	I/O	Terminal Description
16	BUS1	I/O	Command data 1 to servo controller.
17	BUS0	I/O	Command data 0 to servo controller.
18	V • CONT	O	Servo circuit power supply controller.
19	DIS NMI	O	Non-maskable Interrupt.
20	F • CONT	O	Focus servo gain switch in search mode.
21	DF RST	O	Reset output to digital filter.
22	POWER ON	O	Power on output.
23	NC	–	Open
24	V_{SS}	–	GND.
25	OUT • REM	O	Mutual reset, remote output.
26	OUT • INT	O	Mutual reset, interrupt output.
27	NC	–	Open.
28	HOLD	I	⎍ Standby input.
29	BAT • HOLD	I	Battery power sensor input.
30	ACC • HOLD	I	ACC on input.
31	IN • PAUSE	I	Mutual reset, pause input.
32	IN • INT	I	Mutual reset, interrupt input.
33	$\overline{\text{CAM END}}$	I	CAM SW. input.
34	$\overline{\text{D-MUTE}}$	I	MUTE input from DTS.
35	D-STATUS	I	Status input from DTS.
36	D-STBY	O	Standby output to DTS.
37	D-START	O	Start output to DTS.
38	D-CLK	O	Clock output to DTS.
39	D-CMD	O	Command output to DTS.
40	$\overline{\text{EA}}$	I	External Access.
41	V_{DD}	–	Power supply.
42	A • V_{SS}	–	Analog V_{SS}
43	A • V_{REF}	I	Analog V_{REF}
44	T • SENS	I	Temperature sensor input.
45	$\overline{\text{LIMIT}}$	I	Limit SW. input.
46	$\overline{\text{POW SW}}$	I	Power SW. detector.
47	NC	–	Open.
48	AD1	I	Key A/D input 1.
49	AD0	I	Key A/D input 0.
50	QRBM	O	QRBM buzzer output.
51	DSP CLOCK	O	Clock output for μPD7228AG.
52	ALARM	O	RDS alarm output.
53	$\overline{\text{DSP BUSY}}$	I	BUSY input for μPD7228AG.
54	NC	–	Open.
55	DSP SI	O	Serial data output for μPD7228AG.
56	DSP SCK	O	Serial clock output for μPD7228AG.
57	DSP C/D	O	Command/data output for μPD7228AG.
58	$\overline{\text{DSP CS}}$	O	Chip select output for μPD7228AG.
59	$\overline{\text{BZ}}$/SA	O	RDS buzzer/source audio switching output.
60	$\overline{\text{CD}}$/TU	O	CD/radio audio switching output.
61	A • MUTE	O	Audio mute output.

No.	Symbol	I/O	Terminal Description
62	D-LOAD	I	8cm CD load sensor input.
63	RELOAD	I	Position sensor input.
64	D-EJCT	I	12cm CD eject sensor input.

Parts Layout on P. C. Boards and Wiring Diagram (1/2)

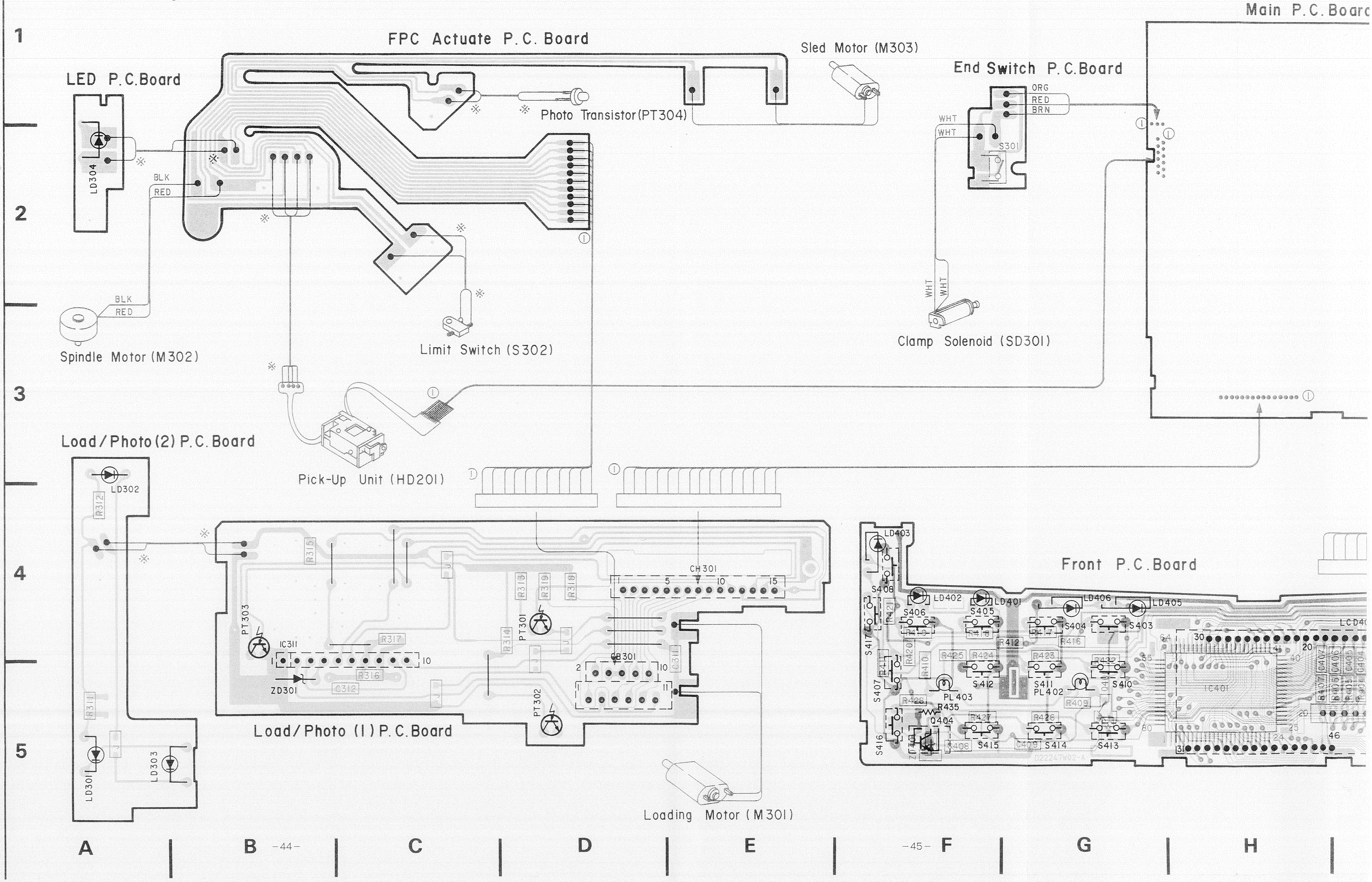

Main P. C. Board
To End Switch P. C. Board
ORG
RED
BRN
CB102
CB101
To Pick-Up Unit (HD201)
YEL
WHT (1)
WHT (2)
WHT (3)
VR101
VR102
VR103
To Load / Photo P. C. Board (1)
To Front P. C. Board
CB103
CB902
CB901
CB801
CB802
CB803
CH801
CH901
CH802
CH803
IC501
IC502
IC503
IC601
IC101
IC102
IC103
IC104
IC105
IC106
IC603
X001
X002
X003
X101
X601
BZ601
VR201
VR202
S601
TH601
BA601
FE001
Audio / Regulator
1
2
3
4
5
A
B
C
D
E
F
G
H

ing Diagram (1/2)

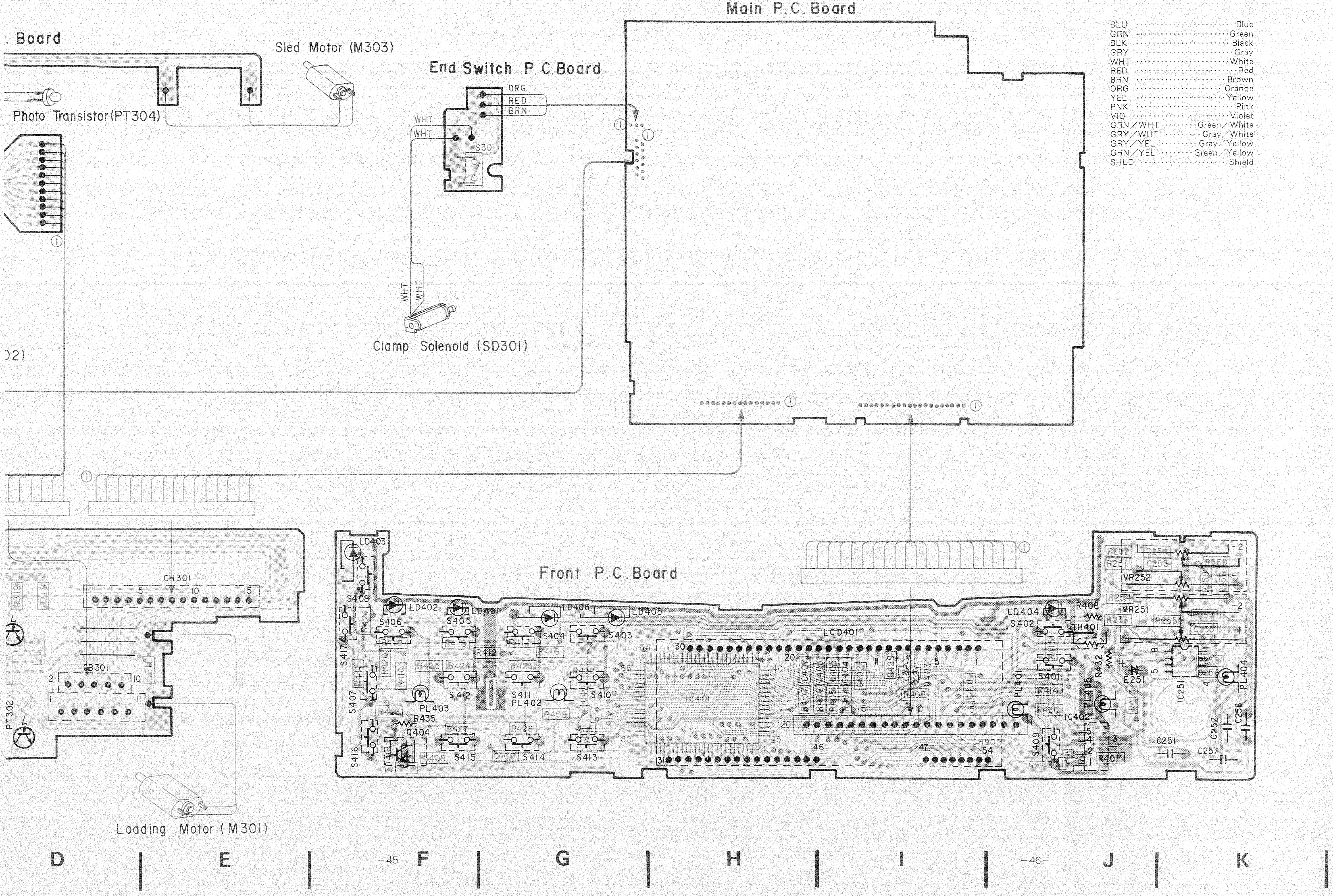

Main P. C. Board
QRB P. C. Board
Audio / Regulator P. C. Board
QRB Socket (18P)(ET801)
FM/MW/LW Tuner Unit (FE001)
To Front P. C. Board
CB901
CB801
CB902
CB802
CB803
CH801
CH901
CH802
CH803
IC501
IC502
IC503
IC001
IC002
IC003
IC008
IC601
IC602
IC603
IC201
IC202
IC203
IC204
IC205
IC301
IC107
IC106
IC803
IC804
X001
X002
X003
X101
X601
BA601
BZ601
S601
VR201
VR202
TH601
BLK
BRN
D
E
F
G
H
I
J
K

BLU	Blue
GRN	Green
BLK	Black
GRY	Gray
WHT	White
RED	Red
BRN	Brown
ORG	Orange
YEL	Yellow
PNK	Pink
VIO	Violet
GRN/WHT	Green/White
GRY/WHT	Gray/White
GRY/YEL	Gray/Yellow
GRN/YEL	Green/Yellow
SHLD	Shield

Parts Layout on P. C. Boards and Wiring Diagram (2/2)


FPC Actuate P.C. Board
LED P.C.Board
LD304
BLK
RED
Photo Transistor (PT304)
Sled Motor (M303)
End Switch P.C.Board
ORG
RED
BRN
WHT
WHT
S301
Main P.C. Boar
Spindle Motor (M302)
Limit Switch (S302)
Clamp Solenoid (SD301)
Pick-Up Unit (HD201)
Load/Photo (2) P.C. Board
LD302
R312
R311
LD301
LD303
Load/Photo (1) P.C. Board
R315
R313
R319
R318
R317
R316
R314
C312
C311
PT303
PT301
PT302
IC311
ZD301
CH301
CB301
Loading Motor (M301)
Front P.C. Board
LD403
LD402
LD401
LD406
LD405
S408
S406
S405
S404
S403
S417
S407
S416
S412
S411
S410
S415
S414
S413
PL403
PL402
R435
Q404
R421
R420
R419
R418
R417
R416
R412
R410
R425
R424
R423
R422
R409
R428
R427
R426
R408
C409
IC401
LCD4
D22247W02-A
1
2
3
4
5
A
B
C
D
E
F
G
H

g Diagram (2/2)

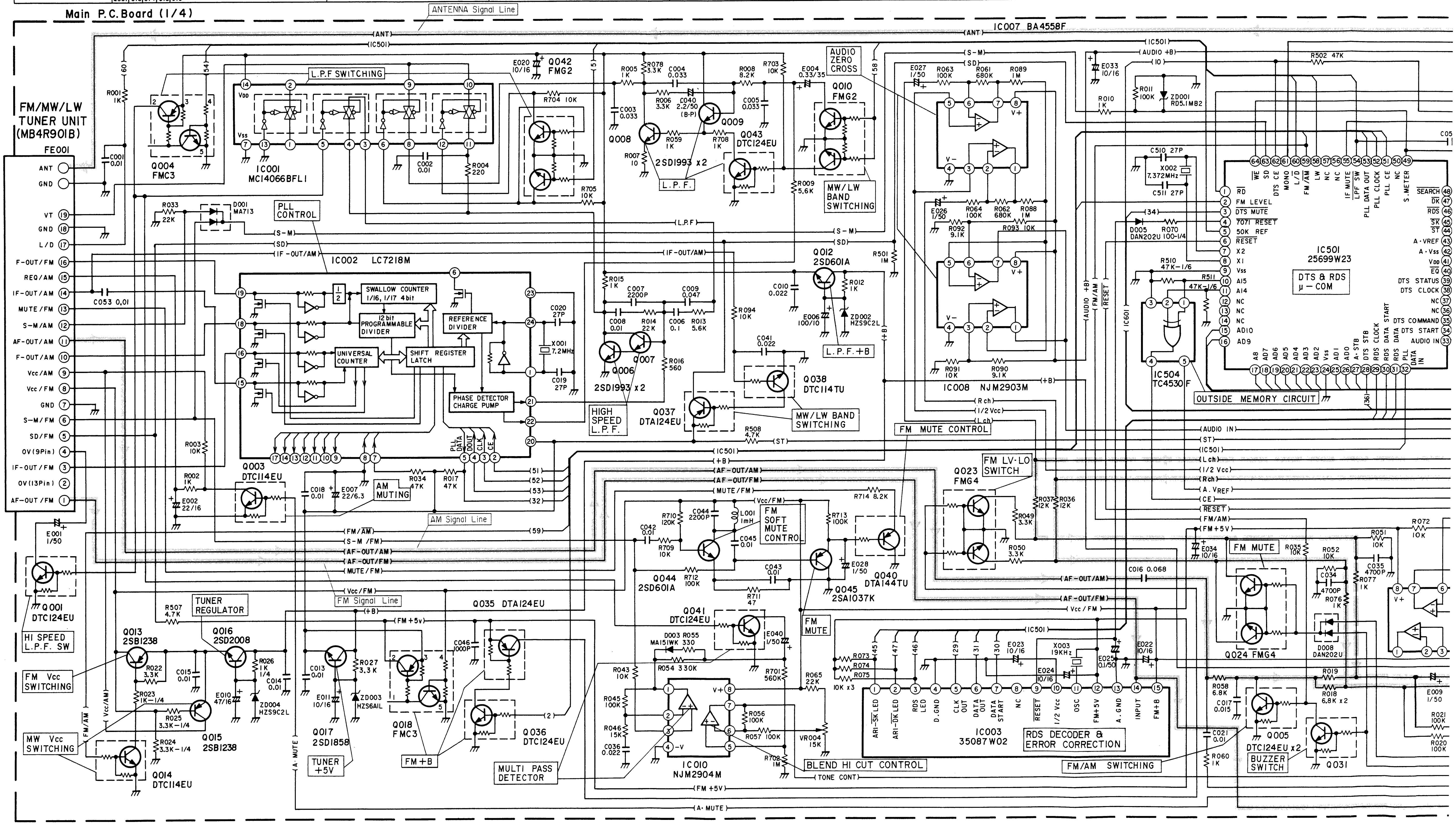

. Board
Sled Motor (M303)
End Switch P.C.Board
Main P.C. Board
Photo Transistor(PT304)
ORG
RED
BRN
WHT
WHT
S301
WHT
WHT
Clamp Solenoid (SD301)
)2)
Front P.C.Board
CH301
CB301
R319
R318
C311
PT302
Loading Motor (M301)
LD403
S408
LD402
LD401
LD406
LD405
S406
S405
S404
S403
S417
S407
S416
S412
S411
S410
S415
S414
S413
PL403
PL402
R435
Q404
R412
R416
R425
R424
R423
R409
R428
R427
R426
C409
LCD401
IC401
CH902
LD404
S402
R408
TH401
R432
S401
PL401
PL405
IC402
S409
Q402
R401
R430
E251
IC251
PL404
C251
C252
C257
C258
VR252
VR251
R252
R251
C254
C253
R260
R255
C255
D
E
F
G
H
I
J
K

BLU	Blue
GRN	Green
BLK	Black
GRY	Gray
WHT	White
RED	Red
BRN	Brown
ORG	Orange
YEL	Yellow
PNK	Pink
VIO	Violet
GRN/WHT	Green/White
GRY/WHT	Gray/White
GRY/YEL	Gray/Yellow
GRN/YEL	Green/Yellow
SHLD	Shield

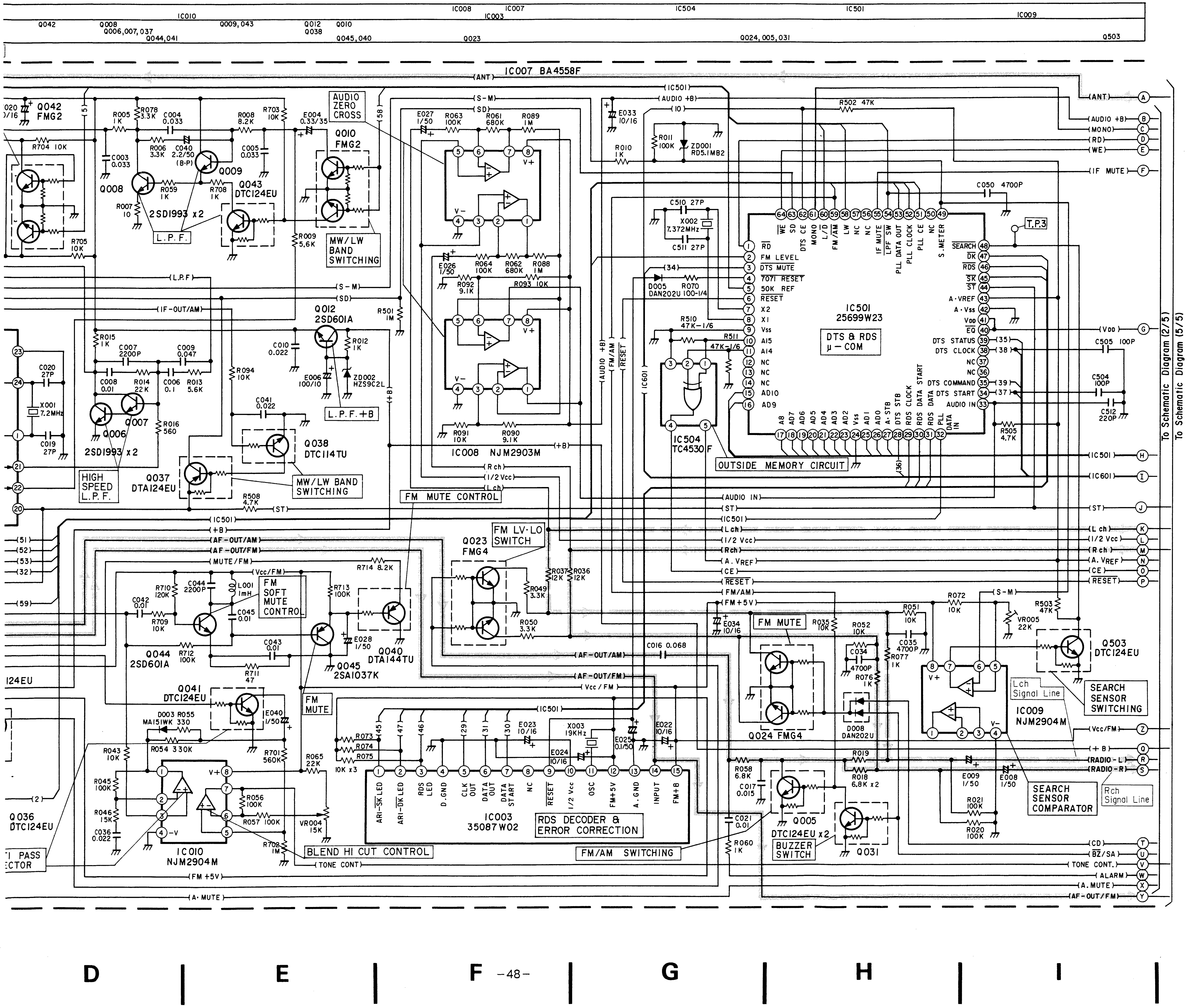
Schematic Diagram (1/5)

IC	IC001	IC002	IC010	IC008	IC003	IC007	IC504	IC501

Transistor (Q) Q004 Q001,013,014,015,016 Q003 Q017,018 Q035,036 Q042 Q008 Q006,007,037 Q044,041 Q009,043 Q012 Q038 Q010 Q045,040 Q023 Q024,005,031



1
2
3
4
5
Main P.C.Board (1/4)
ANTENNA Signal Line
AM Signal Line
FM Signal Line
(ANT)
(IC501)
IC007 BA4558F
FM/MW/LW TUNER UNIT (MB4R901B)
FE001
ANT
GND
VT 19
GND 18
L/D 17
F-OUT/FM 16
REQ/AM 15
IF-OUT/AM 14
MUTE/FM 13
S-M/AM 12
AF-OUT/AM 11
F-OUT/AM 10
Vcc/AM 9
Vcc/FM 8
GND 7
S-M/FM 6
SD/FM 5
OV(9Pin) 4
IF-OUT/FM 3
OV(13Pin) 2
AF-OUT/FM 1
R001 1K
C001 0.01
Q004 FMC3
L.P.F SWITCHING
IC001 MC14066BFL1
C002 0.01
R004 220
E020 10/16
Q042 FMG2
R704 10K
R705 10K
PLL CONTROL
R033 22K
D001 MA713
IC002 LC7218M
SWALLOW COUNTER 1/16, 1/17 4bit
12 bit PROGRAMMABLE DIVIDER
UNIVERSAL COUNTER
SHIFT REGISTER LATCH
REFERENCE DIVIDER
PHASE DETECTOR CHARGE PUMP
C020 27P
X001 7.2MHz
C019 27P
PLL DATA
DOUT
CLK
CE
C053 0.01
R003 10K
R002 1K
E002 22/16
Q003 DTC114EU
C018 0.01
E007 22/6.3
AM MUTING
R034 47K
R017 47K
E001 1/50
Q001 DTC124EU
HI SPEED L.P.F. SW
FM Vcc SWITCHING
MW Vcc SWITCHING
R507 4.7K
TUNER REGULATOR
Q013 2SB1238
R022 3.3K
R023 1K-1/4
R025 3.3K-1/4
R024 3.3K-1/4
Q015 2SB1238
Q014 DTC114EU
C015 0.01
Q016 2SD2008
R026 1K 1/4
C014 0.01
E010 47/16
ZD004 HZS9C2L
C013 0.01
E011 10/16
R027 3.3K
ZD003 HZS6AIL
Q017 2SD1858
TUNER +5V
Q018 FMC3
FM+B
C046 1000P
Q035 DTA124EU
Q036 DTC124EU
MULTI PASS DETECTOR
(A·MUTE)
R005 1K
R078 3.3K
C004 0.033
R006 3.3K
C040 2.2/50 (B·P)
C003 0.033
Q008
R059 1K
R007 10
2SD1993 x2
Q009
R708 1K
Q043 DTC124EU
L.P.F.
R008 8.2K
C005 0.033
R703 10K
E004 0.33/35
R009 5.6K
R015 1K
C007 2200P
C009 0.047
C008 0.01
R014 22K
C006 0.1
R013 5.6K
Q006
Q007
2SD1993 x2
R016 560
HIGH SPEED L.P.F.
Q037 DTA124EU
R094 10K
C041 0.022
Q038 DTC114TU
MW/LW BAND SWITCHING
R508 4.7K
AUDIO ZERO CROSS
Q010 FMG2
MW/LW BAND SWITCHING
C010 0.022
Q012 2SD601A
R012 1K
E006 100/10
ZD002 HZS9C2L
L.P.F.+B
R501 1M
E027 1/50
R063 100K
R061 680K
R089 1M
E026 1/50
R064 100K
R062 680K
R088 1M
R092 9.1K
R093 10K
R091 10K
R090 9.1K
IC008 NJM2903M
FM MUTE CONTROL
E033 10/16
R010 1K
R011 100K
ZD001 RD5.1MB2
C510 27P
X002 7.372MHz
C511 27P
D005 DAN202U
R070 100-1/4
R510 47K-1/6
R511 47K-1/6
IC504 TC4530F
OUTSIDE MEMORY CIRCUIT
IC501 25699W23
DTS & RDS μ-COM
RD
FM LEVEL
DTS MUTE
7071 RESET
50K REF
RESET
X2
X1
Vss
A15
A14
NC
AD10
AD9
WE
SD
DTS CE
MONO
L/D
FM/AM
LW
IF MUTE
LPF SW
PLL DATA OUT
PLL CLOCK
PLL CE
S.METER
SEARCH 48
DK 47
RDS 46
SK 45
ST 44
A·VREF 43
A·Vss 42
Vdd 41
EQ 40
DTS STATUS 39
DTS CLOCK 38
NC 37
NC 36
DTS COMMAND 35
DTS START 34
AUDIO IN 33
(L.P.F)
(S-M)
(SD)
(IF-OUT/AM)
(AUDIO +B)
(IO)
(34)
(+B)
(R ch)
(1/2 Vcc)
(L ch)
(AUDIO IN)
(ST)
(IC501)
(A. VREF)
(CE)
(RESET)
(FM/AM)
(FM+5V)
(AF-OUT/AM)
(AF-OUT/FM)
(Vcc/FM)
(MUTE/FM)
(S-M/FM)
(FM/AM)
(59)
(51)
(52)
(53)
(32)
(TONE CONT)
(A·MUTE)
FM SOFT MUTE CONTROL
R710 120K
C044 2200P
L001 1mH
C042 0.01
R709 10K
C045 0.01
Q044 2SD601A
R712 100K
C043 0.01
R711 47
Q045 2SA1037K
E028 1/50
R713 100K
R714 8.2K
Q040 DTA144TU
FM MUTE
Q041 DTC124EU
D003 MA151WK
R055 330
R054 330K
E040 1/50
R043 10K
R045 100K
R046 15K
C036 0.022
IC010 NJM2904M
R701 560K
R056 100K
R057 100K
R065 22K
VR004 15K
R702 1M
BLEND HI CUT CONTROL
FM LV-LO SWITCH
Q023 FMG4
R037 12K
R036 12K
R049 3.3K
R050 3.3K
C016 0.068
R073
R074
R075
10K x3
E023 10/16
X003 19KHz
E024 10/16
E025 0.1/50
E022 10/16
ARI-SK LED
ARI-DK LED
RDS LED
D.GND
CLK OUT
DATA OUT
DATA START
NC
RESET
1/2 Vcc
OSC
FM+5V
A.GND
INPUT
FM+B
IC003 35087W02
RDS DECODER & ERROR CORRECTION
FM/AM SWITCHING
E034 10/16
FM MUTE
R035
R052 10K
C034 4700P
R076 1K
C035 4700P
R077 1K
R051 10K
R072 10K
D008 DAN202U
Q024 FMG4
R058 6.8K
C017 0.015
R019
R018 6.8K x2
C021 0.01
R060 1K
Q005
DTC124EU x2
BUZZER SWITCH
Q031
E009 1/50
R021 100K
R020 100K
R502 47K
C05
V+
V-
A
B
C
D
E
F
G
H


IC010
Q042
Q008
Q006,007,037
Q044,041
Q009,043
Q012
Q038
Q010
Q045,040
IC008
IC007
IC003
Q023
IC504
IC501
Q024,005,031
IC009
Q503
IC007 BA4558F
Q042 FMG2
R704 10K
R705 10K
R005 1K
R078 3.3K
C004 0.033
C003 0.033
R006 3.3K
C040 2.2/50 (B·P)
Q009
Q008
R007 10
R059 1K
R708 1K
Q043 DTC124EU
2SD1993 x2
L.P.F.
R008 8.2K
R703 10K
C005 0.033
E004 0.33/35
R009 5.6K
AUDIO ZERO CROSS
Q010 FMG2
MW/LW BAND SWITCHING
E027 1/50
R063 100K
R061 680K
R089 1M
E026 1/50
R064 100K
R062 680K
R088 1M
R092 9.1K
R093 10K
R091 10K
R090 9.1K
IC008 NJM2903M
R015 1K
C007 2200P
C009 0.047
C008 0.01
R014 22K
C006 0.1
R013 5.6K
R016 560
Q006
Q007
2SD1993 x2
HIGH SPEED L.P.F.
C020 27P
X001 7.2MHz
C019 27P
Q012 2SD601A
R012 1K
C010 0.022
E006 100/10
ZD002 HZS9C2L
L.P.F.+B
R094 10K
C041 0.022
Q038 DTC114TU
Q037 DTA124EU
MW/LW BAND SWITCHING
R508 4.7K
R501 1M
FM MUTE CONTROL
E033 10/16
R011 100K
ZD001 RD5.1MB2
R010 1K
C510 27P
X002 7.372MHz
C511 27P
D005 DAN202U
R070 100-1/4
R510 47K-1/6
R511 47K-1/6
IC504 TC4530F
OUTSIDE MEMORY CIRCUIT
R502 47K
C050 4700P
T.P.3
IC501 25699W23
DTS & RDS μ-COM
C505 100P
C504 100P
C512 220P
R505 4.7K
FM LV·LO SWITCH
Q023 FMG4
R714 8.2K
R037 12K
R036 12K
R049 3.3K
R050 3.3K
R710 120K
C044 2200P
L001 1mH
FM SOFT MUTE CONTROL
R713 100K
C042 0.01
R709 10K
C045 0.01
Q044 2SD601A
R712 100K
C043 0.01
E028 1/50
Q040 DTA144TU
Q045 2SA1037K
R711 47
C016 0.068
Q041 DTC124EU
D003 MA151WK
R055 330
R054 330K
E040 1/50
FM MUTE
R043 10K
R045 100K
R046 15K
C036 0.022
R701 560K
R056 100K
R057 100K
R065 22K
VR004 15K
R702 1M
IC010 NJM2904M
BLEND HI CUT CONTROL
R073
R074
R075
10K x3
E023 10/16
X003 19KHz
E024 10/16
E025 0.1/50
E022 10/16
IC003 35087W02
RDS DECODER & ERROR CORRECTION
FM/AM SWITCHING
E034 10/16
FM MUTE
R035 10K
R052 10K
C034 4700P
R076 1K
D008 DAN202U
R051 10K
C035 4700P
R077 1K
Q024 FMG4
R072 10K
VR005 22K
R503 47K
Q503 DTC124EU
SEARCH SENSOR SWITCHING
Lch Signal Line
IC009 NJM2904M
R019
R018 6.8K x2
E009 1/50
E008 1/50
R021 100K
R020 100K
SEARCH SENSOR COMPARATOR
Rch Signal Line
R058 6.8K
C017 0.015
Q005
DTC124EU x2
BUZZER SWITCH
Q031
C021 0.01
R060 1K
Q036 DTC124EU
ANT
AUDIO +B
MONO
RD
WE
IF MUTE
VDD
IC501
IC601
ST
L ch
1/2 Vcc
R ch
A. VREF
CE
RESET
Vcc/FM
+B
RADIO-L
RADIO-R
CD
BZ/SA
TONE CONT.
ALARM
A. MUTE
AF-OUT/FM
To Schematic Diagram (2/5)
To Schematic Diagram (5/5)
D
E
F
G
H
I
J
K

IC001

1	0V
2	0V
3	0.6V
4	0.6V
5	9V
6	6.2V
7	0V
8	3.3V
9	3.3V
10	3.3V
11	0.6V
12	0V
13	0V
14	9V

IC007

1	PULSE
2	0V
3	4.4V
4	0V
5	4.4V
6	4.4V
7	PULSE
8	8.4V

IC008

1	PULSE
2	PULSE
3	0V
4	0V
5	PULSE
6	4V
7	PULSE
8	8.4V

IC002

1	1.7V	13	0V
2	0V	14	0V
3	0V	15	0V
4	0V	16	0V
5	4.6V	17	0V
6	0V	18	0V
7	4.6V	19	2.1V
8	0V	20	4.9V
9	0V	21	1.1V
10	0V	22	PULSE
11	0V	23	0V
12	0V	24	2.5V

IC009

1	0V
2	0V
3	0V
4	0V
5	3.6V
6	4.6V
7	0V
8	8.9V

IC010

1	5.6V
2	5.6V
3	5.5V
4	0V
5	1.5V
6	2.4V
7	4.5V
8	8.9V

IC003

1	4.7V
2	4.7V
3	4.7V
4	0V
5	4.7V
6	4.7V
7	4.7V
8	0V
9	3.8V
10	4.4V
11	PULSE
12	4.7V
13	0V
14	PULSE
15	9V

	1	2	3	4	5
Q004	0V	9V	9V	5V	0V
Q010	0V	6.3V	0V	0V	0V
Q018	0V	4.7V	4.9V	9V	0V
Q023	0.7V	0.7V	0V	0V	
Q024	0.7V	0.7V	0V	0V	
Q042	6.2V	0V	6.2V	0V	0V

IC504

1	0V
2	5V
3	0V
4	0.9V
5	5V

	E	C	B
Q001	0V	0V	9V
Q003	0V	0V	4.9V
Q005	0V	0V	3.5V
Q006	0V	0.6V	0.6V
Q007	0.6V	0.6V	1.1V
Q008	0V	3.3V	0.5V
Q009	0.5V	9V	1.1V
Q012	9V	14.2V	9.6V
Q013	9V	9V	8.2V
Q014	0V	0V	4.9V
Q015	9V	0V	8.9V
Q016	9.6V	14.2V	9V
Q017	4.7V	14.2V	5.4V
Q031	0V	3.5V	0V
Q035	4.7V	0V	4.5V
Q036	0V	4.5V	0V
Q037	4.9V	4.7V	4.7V
Q038	0V	4.7V	0V
Q040	6.6V	0V	6.1V
Q041	0V	0V	9V
Q043	0V	0V	6.3V
Q044	1.4V	8.5V	2V
Q045	6.1V	0V	5.1V
Q503	0V	4.8V	0V

IC501

1	5V	17	0V	33	0V	49	PULSE
2	0V	18	PULSE	34	PULSE	50	0V
3	5V	19	PULSE	35	PULSE	51	0V
4	5V	20	PULSE	36	0V	52	0V
5	0V	21	PULSE	37	5V	53	0V
6	5V	22	PULSE	38	PULSE	54	0V
7	PULSE	23	0V	39	0V	55	0V
8	1.9V	24	0V	40	5V	56	0V
9	0V	25	0V	41	5V	57	0V
10	0V	26	0V	42	0V	58	0V
11	5V	27	0V	43	5V	59	4.9V
12	PULSE	28	0V	44	4.8V	60	0V
13	PULSE	29	4.6V	45	4.6V	61	0V
14	PULSE	30	4.6V	46	4.6V	62	5V
15	PULSE	31	4.6V	47	4.6V	63	0V
16	PULSE	32	4.6V	48	0V	64	5V

[Measuring Conditions]

- Power Supply Voltage : DC14V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions :

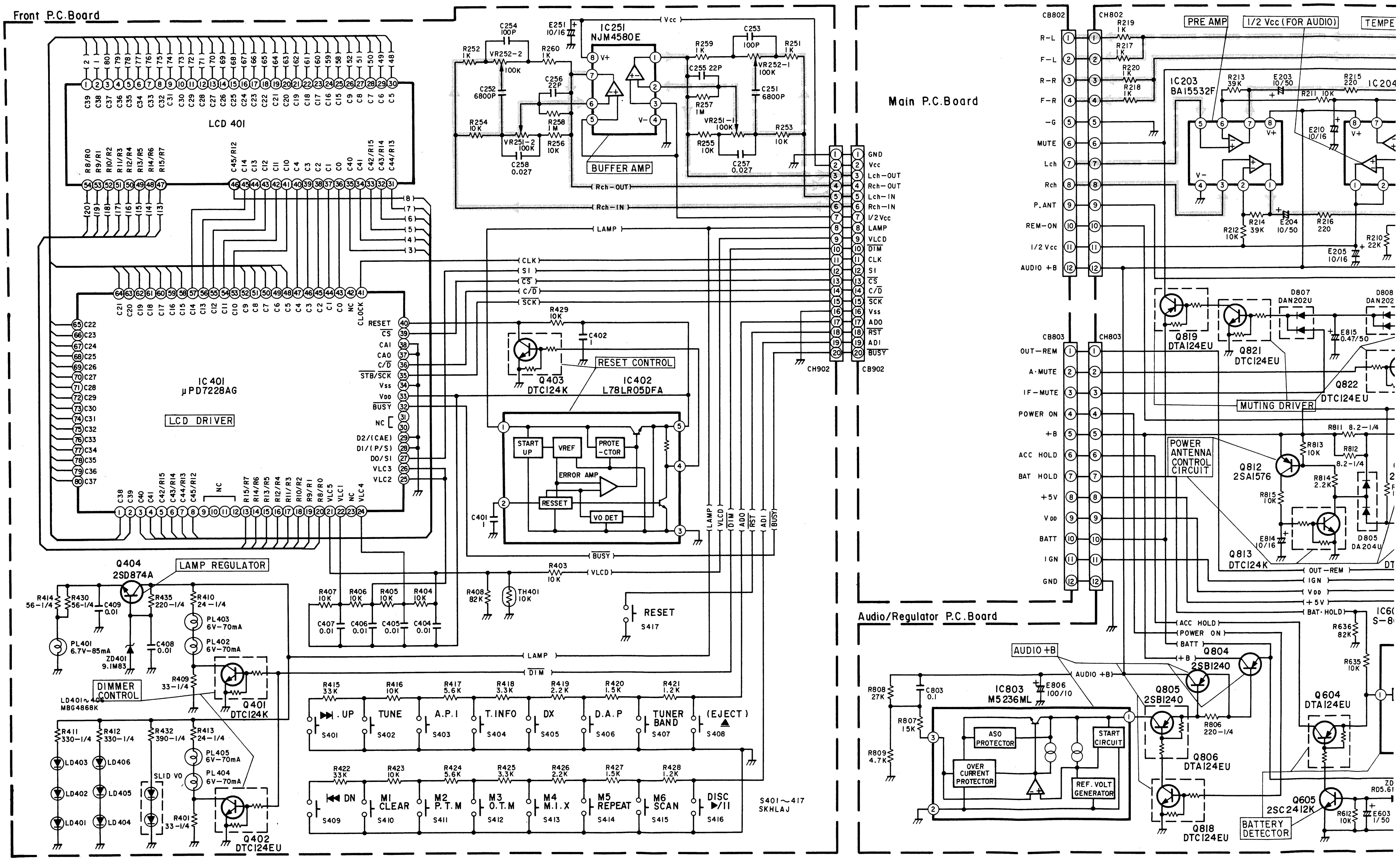
  CD : Be playing back the 2nd Music of the test CD (YEDS-18)
  TUNER : No signal input
  FM : 98.1MHz
  MW : 999kHz
  LW : 216kHz

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$

Schematic Diagram (3/5)

I C		IC401		IC251 IC402		IC803	IC203	IC204 IC603
Transistor (Q)		Q404, 401, 402		Q403			Q819, 821, 812 Q805, 804, 806, 818	Q605, 604, 813, 822


1
2
3
4
5
Front P.C.Board
LCD 401
IC401
µPD7228AG
LCD DRIVER
IC251
NJM4580E
BUFFER AMP
Q403
DTC124K
RESET CONTROL
IC402
L78LR05DFA
START UP
VREF
PROTE-CTOR
ERROR AMP
RESSET
VO DET
Q404
2SD874A
LAMP REGULATOR
DIMMER CONTROL
Q401
DTC124K
Q402
DTC124EU
LD401~406
MBG4868K
SLID VO
PL401 6.7V-85mA
PL402 6V-70mA
PL403 6V-70mA
PL404 6V-70mA
PL405 6V-70mA
ZD401 9.1MB3
TH401 10K
RESET S417
▶▶ UP S401
TUNE S402
A.P.I S403
T.INFO S404
DX S405
D.A.P S406
TUNER BAND S407
(EJECT) ▲ S408
◀◀ DN S409
M1 CLEAR S410
M2 P.T.M S411
M3 O.T.M S412
M4 M.I.X S413
M5 REPEAT S414
M6 SCAN S415
DISC ▶/II S416
S401~417 SKHLAJ
CH902
CB902
GND
Vcc
Lch-OUT
Rch-OUT
Lch-IN
Rch-IN
1/2Vcc
LAMP
VLCD
DIM
CLK
SI
CS
C/D
SCK
Vss
ADO
RST
ADI
BUSY
Main P.C.Board
CB802
CH802
R-L
F-L
R-R
F-R
-G
MUTE
Lch
Rch
P.ANT
REM-ON
1/2 Vcc
AUDIO +B
PRE AMP
1/2 Vcc (FOR AUDIO)
TEMPE
IC203
BA15532F
IC204
Q819
DTA124EU
Q821
DTC124EU
Q822
DTC124EU
D807
DAN202U
D808
DAN202
E815 0.47/50
MUTING DRIVER
CB803
CH803
OUT-REM
A-MUTE
IF-MUTE
POWER ON
+B
ACC HOLD
BAT HOLD
+5V
VDD
BATT
IGN
GND
POWER ANTENNA CONTROL CIRCUIT
Q812
2SA1576
Q813
DTC124K
D805
DA204U
Audio/Regulator P.C.Board
AUDIO +B
IC803
M5236ML
ASO PROTECTOR
OVER CURRENT PROTECTOR
START CIRCUIT
REF. VOLT GENERATOR
Q804
2SB1240
Q805
2SB1240
Q806
DTA124EU
Q818
DTC124EU
Q604
DTA124EU
Q605
2SC2412K
BATTERY DETECTOR

A

B -53-

C

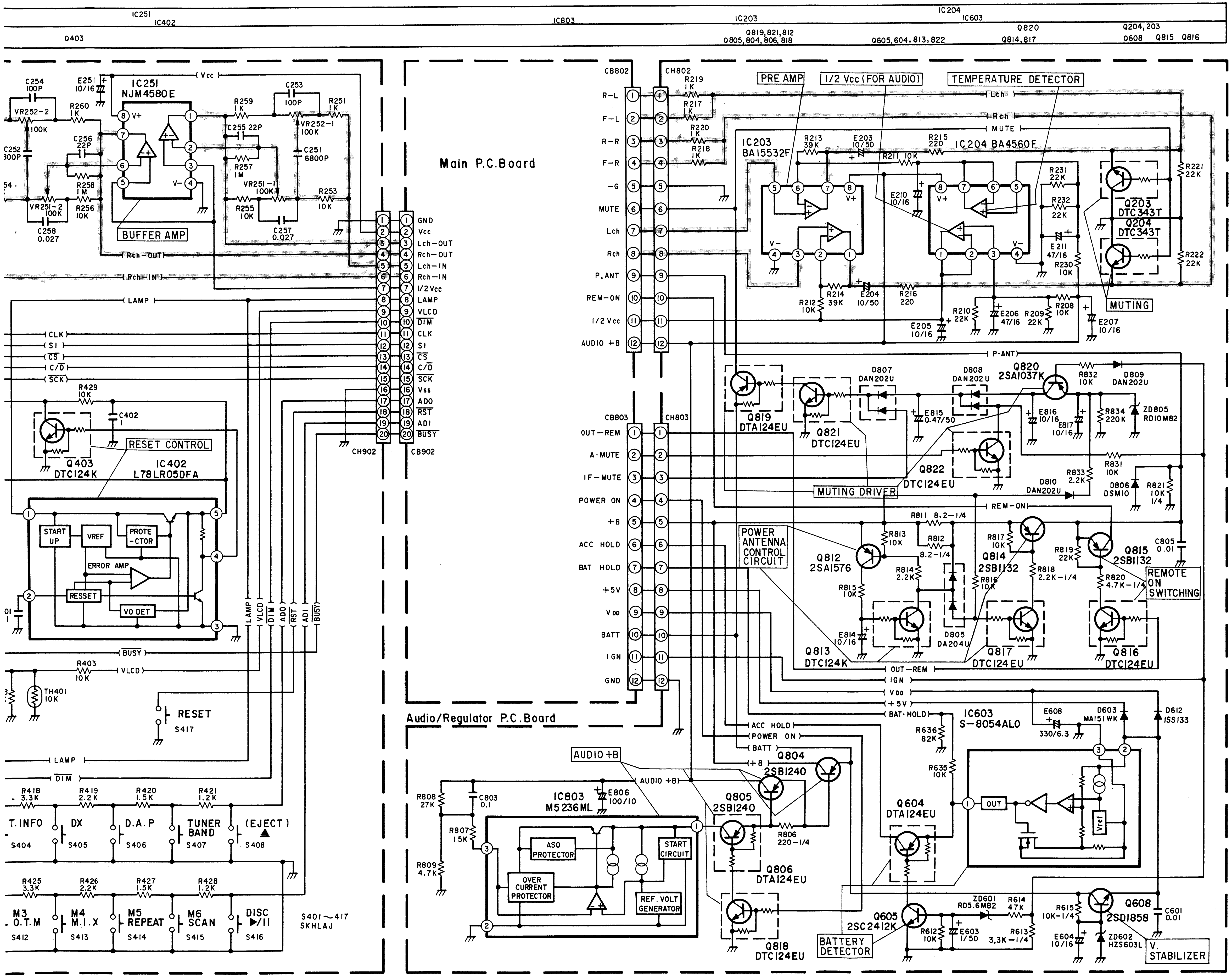
D

E

F -54-

G

H


IC251
IC402
Q403
IC803
IC203
Q819,821,812
Q805,804,806,818
IC204
IC603
Q605,604,813,822
Q820
Q814,817
Q204,203
Q608 Q815 Q816
IC251 NJM4580E
BUFFER AMP
Main P.C.Board
Audio/Regulator P.C.Board
CB802
CH802
CB803
CH803
CH902
CB902
PRE AMP
1/2 Vcc (FOR AUDIO)
TEMPERATURE DETECTOR
IC203 BA15532F
IC204 BA4560F
Q203 DTC343T
Q204 DTC343T
MUTING
Q819 DTA124EU
Q821 DTC124EU
Q820 2SA1037K
Q822 DTC124EU
MUTING DRIVER
POWER ANTENNA CONTROL CIRCUIT
Q812 2SA1576
Q813 DTC124K
Q814 2SB1132
Q817 DTC124EU
Q815 2SB1132
Q816 DTC124EU
REMOTE ON SWITCHING
RESET CONTROL
Q403 DTC124K
IC402 L78LR05DFA
START UP
VREF
PROTE -CTOR
ERROR AMP
RESSET
VO DET
RESET S417
AUDIO +B
IC803 M5236ML
ASO PROTECTOR
OVER CURRENT PROTECTOR
START CIRCUIT
REF. VOLT GENERATOR
Q804 2SB1240
Q805 2SB1240
Q806 DTA124EU
Q818 DTC124EU
IC603 S-8054ALO
Q604 DTA124EU
Q605 2SC2412K
BATTERY DETECTOR
Q608 2SD1858
V. STABILIZER
T.INFO S404
DX S405
D.A.P S406
TUNER BAND S407
(EJECT) S408
M3 O.T.M S412
M4 M.I.X S413
M5 REPEAT S414
M6 SCAN S415
DISC ▶/II S416
S401～417 SKHLAJ
R-L
F-L
R-R
F-R
-G
MUTE
Lch
Rch
P.ANT
REM-ON
1/2 Vcc
AUDIO +B
OUT-REM
A-MUTE
IF-MUTE
POWER ON
+B
ACC HOLD
BAT HOLD
+5V
VDD
BATT
IGN
GND
Vcc
Lch-OUT
Rch-OUT
Lch-IN
Rch-IN
1/2Vcc
LAMP
VLCD
DIM
CLK
SI
CS
C/D
SCK
Vss
ADO
RST
ADI
BUSY

▨ Lch Signal Line

▨ Rch Signal Line

IC401

1	PULSE	17	PULSE	33	5V	49	1.9V	65	1.9V
2	PULSE	18	PULSE	34	0V	50	PULSE	66	1.9V
3	PULSE	19	PULSE	35	PULSE	51	PULSE	67	1.9V
4	0V	20	PULSE	36	PULSE	52	1.9V	68	1.9V
5	0V	21	-1V	37	0V	53	PULSE	69	1.9V
6	PULSE	22	3.4V	38	0V	54	PULSE	70	1.9V
7	PULSE	23	0V	39	PULSE	55	PULSE	71	1.9V
8	1.8V	24	0.4V	40	0V	56	PULSE	72	1.9V
9	PULSE	25	1.8V	41	PULSE	57	PULSE	73	1.9V
10	PULSE	26	1.8V	42	0V	58	PULSE	74	PULSE
11	PULSE	27	PULSE	43	1.9V	59	PULSE	75	PULSE
12	PULSE	28	0V	44	0V	60	PULSE	76	PULSE
13	PULSE	29	0V	45	PULSE	61	PULSE	77	1.9V
14	PULSE	30	0V	46	PULSE	62	PULSE	78	PULSE
15	PULSE	31	PULSE	47	1.9V	63	1.9V	79	PULSE
16	PULSE	32	PULSE	48	1.9V	64	1.9V	80	PULSE

IC402

1	12.7V
2	5.7V
3	0V
4	3.2V
5	4.8V

IC251

1	PULSE
2	4.3V
3	4.3V
4	0V
5	4.3V
6	4.3V
7	PULSE
8	8.3V

IC203

1	PULSE
2	PULSE
3	4.2V
4	0V
5	4.2V
6	PULSE
7	PULSE
8	8.3V

IC204

1	4.3V
2	4.3V
3	0V
4	0V
5	4.3V
6	4.3V
7	4.3V
8	8.3V

IC603

1	5.4V
2	5.7V
3	0V

IC803

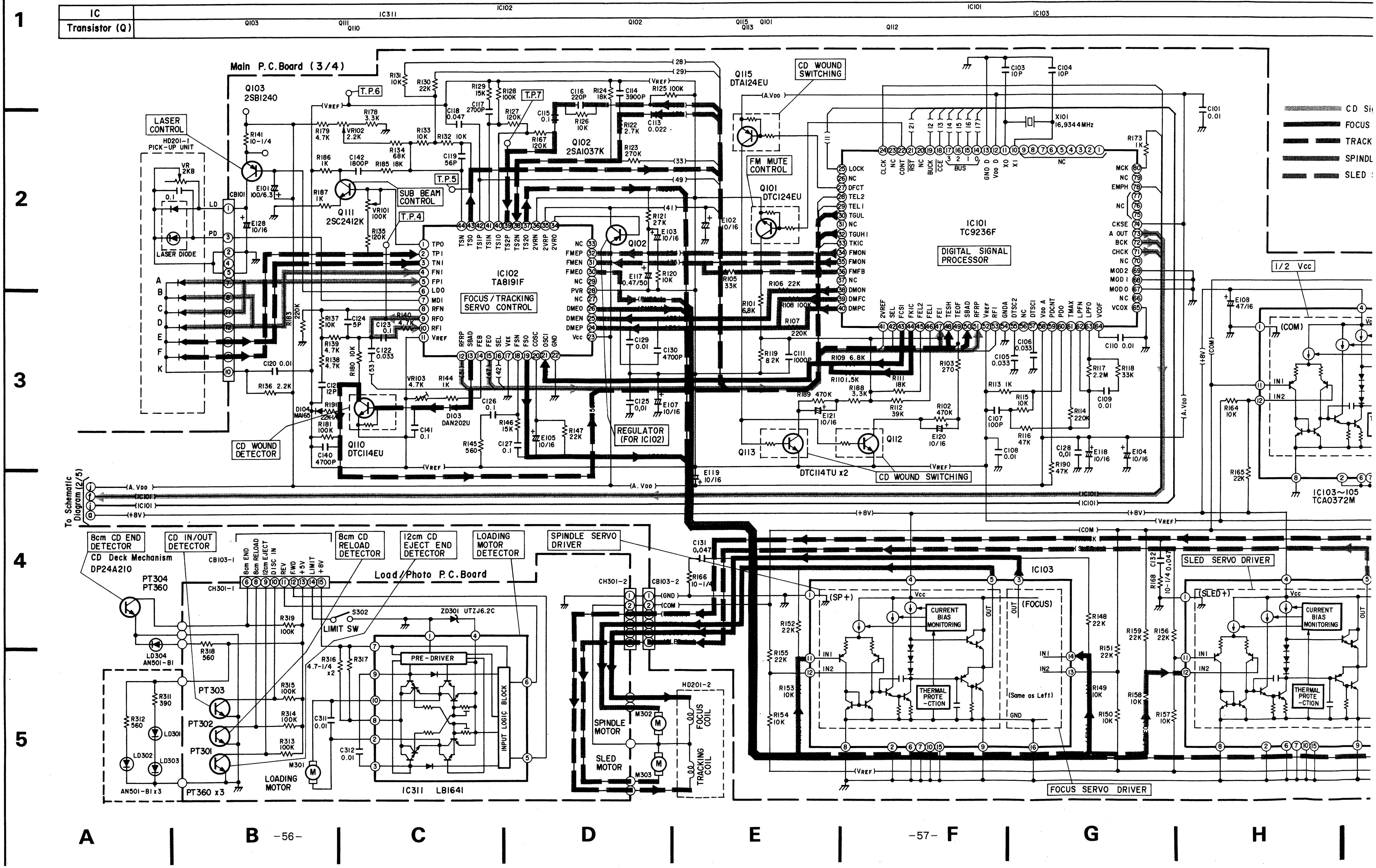
1	13.3V
2	0V
3	1.21V

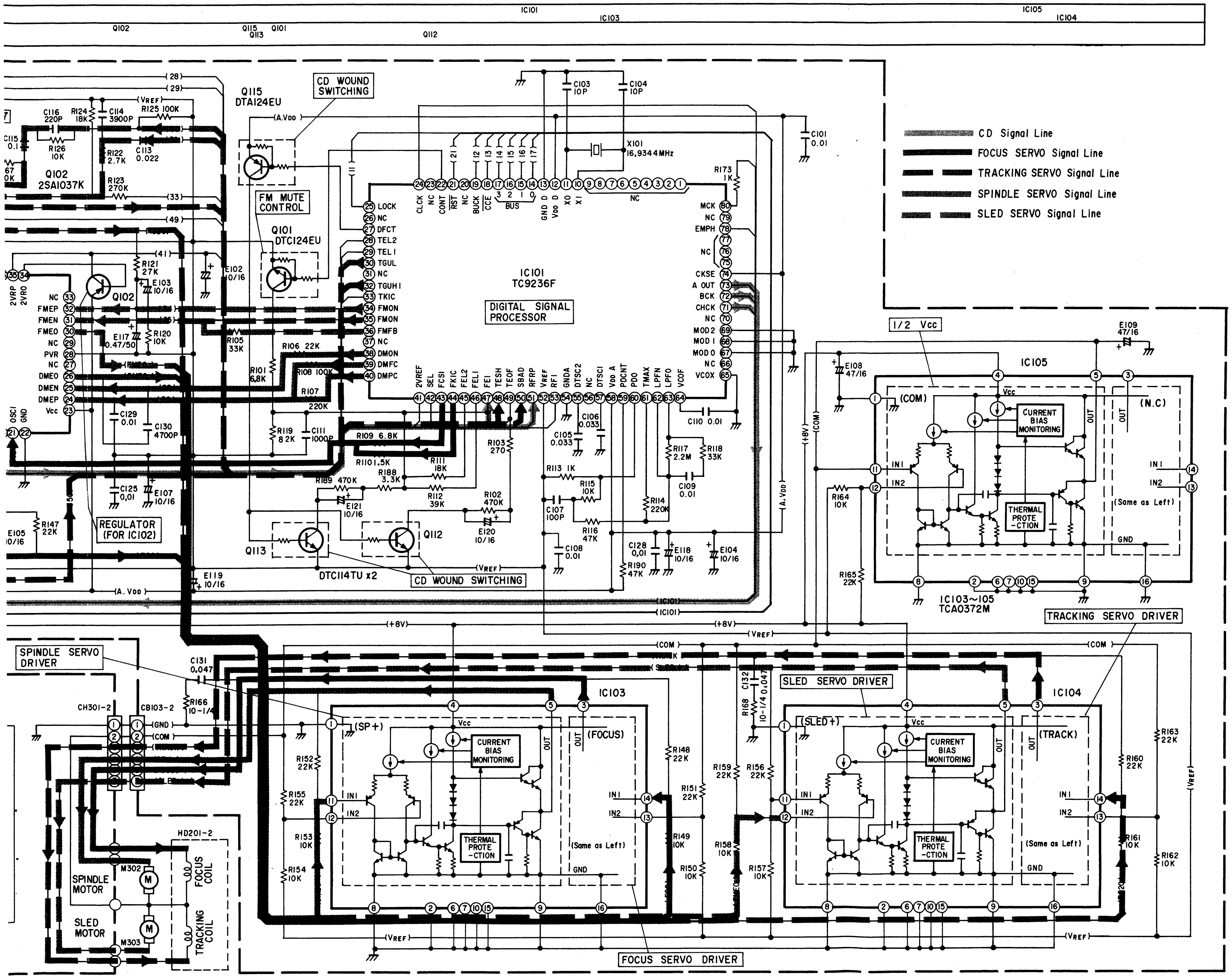
	E	C	B
Q203	0V	0V	0V
Q204	0V	0V	0V
Q401	0V	0.4V	7.5V
Q402	0V	0.4V	7.5V
Q403	0V	0V	3.3V
Q404	10.3V	12.7V	11V
Q604	5.3V	5.3V	0V
Q605	0V	0V	0.4V
Q608	5.6V	14.2V	6.2V
Q804	14.3V	14.2V	13.5V
Q805	13.8V	8.2V	13.2V
Q806	12.9V	12.9V	10V
Q812	14.1V	0V	14.1V
Q813	0V	14V	0V
Q814	14.1V	14.1V	13.4V
Q815	14.1V	14.1V	13.4V
Q816	0V	0V	4.8V
Q817	0V	0V	9.5V
Q818	0V	0V	4.8V
Q819	14.2V	0V	13.7V
Q820	9.9V	0V	9.3V
Q821	0V	13.7V	0V
Q822	0V	0V	4.8V

[Measuring Conditions]
- Power Supply Voltage : DC14V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions :
  CD : Be playing back the 2nd Music of the test CD (YEDS-)8)
  TUNER : No signal input
  FM : 98.1MHz
  MW : 999kHz
  LW : 216kHz

NOTES:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1,000,000}$

Schematic Diagram (4/5)


IC
Transistor (Q)
IC311
IC102
IC101
IC103
Q103
Q111 Q110
Q102
Q115 Q113
Q101
Q112
Main P.C.Board (3/4)
Q103 2SB1240
LASER CONTROL
HD201-1 PICK-UP UNIT
LASER DIODE
CB101
T.P.6
T.P.7
T.P.5
T.P.4
SUB BEAM CONTROL
Q111 2SC2412K
Q102 2SA1037K
IC102 TA8191F
FOCUS/TRACKING SERVO CONTROL
REGULATOR (FOR IC102)
Q110 DTC114EU
CD WOUND DETECTOR
D103 DAN202U
Q115 DTA124EU
CD WOUND SWITCHING
FM MUTE CONTROL
Q101 DTC124EU
IC101 TC9236F
DIGITAL SIGNAL PROCESSOR
X101 16.9344MHz
Q113
Q112
DTC114TU x2
CD WOUND SWITCHING
CD Si
FOCUS
TRACK
SPINDL
SLED
1/2 Vcc
IC103~105 TCA0372M
To Schematic Diagram (2/5)
8cm CD END DETECTOR
CD IN/OUT DETECTOR
8cm CD RELOAD DETECTOR
12cm CD EJECT END DETECTOR
LOADING MOTOR DETECTOR
SPINDLE SERVO DRIVER
CD Deck Mechanism DP24A210
Load/Photo P.C.Board
PT304 PT360
LD304 AN501-B1
PT303
PT302
PT301
AN501-B1 x3
PT360 x3
LIMIT SW
S302
ZD301 UTZJ6.2C
PRE-DRIVER
INPUT LOGIC BLOCK
M301 LOADING MOTOR
IC311 LB1641
CH301-2
CB103-2
HD201-2
SPINDLE MOTOR M302
SLED MOTOR M303
FOCUS COIL
TRACKING COIL
IC103
CURRENT BIAS MONITORING
THERMAL PROTE -CTION
(Same as Left)
SLED SERVO DRIVER
FOCUS SERVO DRIVER
1
2
3
4
5
A
B
C
D
E
F
G
H


IC101
IC103
IC105
IC104
Q102
Q115
Q113
Q101
Q112
CD WOUND SWITCHING
Q115 DTA124EU
FM MUTE CONTROL
Q101 DTC124EU
Q102 2SA1037K
IC101 TC9236F
DIGITAL SIGNAL PROCESSOR
X101 16.9344MHz
REGULATOR (FOR IC102)
Q113
Q112
DTC114TU x2
CD WOUND SWITCHING
CD Signal Line
FOCUS SERVO Signal Line
TRACKING SERVO Signal Line
SPINDLE SERVO Signal Line
SLED SERVO Signal Line
1/2 Vcc
IC105
CURRENT BIAS MONITORING
THERMAL PROTE -CTION
IC103~105 TCA0372M
TRACKING SERVO DRIVER
SPINDLE SERVO DRIVER
SLED SERVO DRIVER
IC103
IC104
(SP+)
(FOCUS)
(SLED+)
(TRACK)
(Same as Left)
CH301-2
CB103-2
HD201-2
SPINDLE MOTOR
SLED MOTOR
M302
M303
FOCUS COIL
TRACKING COIL
FOCUS SERVO DRIVER

IC101									
1	4.8V	17	PULSE	33	1.6V	49	0V	65	0V
2	4.8V	18	PULSE	34	2.1V	50	0V	66	PULSE
3	PULSE	19	PULSE	35	0V	51	0V	67	0V
4	PULSE	20	PULSE	36	2V	52	0V	68	0V
5	PULSE	21	4.9V	37	4.8V	53	0V	69	0V
6	PULSE	22	0V	38	0V	54	0V	70	PULSE
7	PULSE	23	PULSE	39	PULSE	55	0V	71	PULSE
8	PULSE	24	0V	40	PULSE	56	0V	72	PULSE
9	PULSE	25	5V	41	4.2V	57	PULSE	73	PULSE
10	0.8V	26	4.8V	42	5V	58	5V	74	5V
11	PULSE	27	PULSE	43	2.4V	59	PULSE	75	0V
12	5V	28	2V	44	0V	60	PULSE	76	4.8V
13	0V	29	2V	45	0V	61	0V	77	0V
14	PULSE	30	2.1V	46	PULSE	62	0V	78	0V
15	PULSE	31	0V	47	0V	63	0V	79	4.8V
16	PULSE	32	2.1V	48	0V	64	0V	80	PULSE

IC102							
1	1.7V	12	PULSE	23	5V	34	4.4V
2	2V	13	2.7V	24	PULSE	35	0V
3	2V	14	2V	25	2.1V	36	2.1V
4	2V	15	PULSE	26	PULSE	37	PULSE
5	2V	16	4.9V	27	PULSE	38	2V
6	3.9V	17	0V	28	2.1V	39	2V
7	0.1V	18	PULSE	29	2.1V	40	PULSE
8	2.1V	19	PULSE	30	2V	41	2V
9	PULSE	20	PULSE	31	2V	42	2.1V
10	PULSE	21	2.4V	32	2.1V	43	2.1V
11	2.1V	22	0V	33	PULSE	44	2.1V

IC103	
1	0V
2	0V
3	PULSE
4	8.5V
5	4V
6	0V
7	0V
8	0V
9	0V
10	0V
11	2.6V
12	2.6V
13	2.6V
14	2.6V
15	0V
16	0V

IC104	
1	0V
2	0V
3	PULSE
4	8.5V
5	PULSE
6	0V
7	0V
8	0V
9	0V
10	0V
11	2.6V
12	2.6V
13	2.6V
14	2.6V
15	0V
16	0V

IC105	
1	0V
2	0V
3	0.3V
4	8.5V
5	4V
6	0V
7	0V
8	0V
9	0V
10	0V
11	4V
12	4V
13	PULSE
14	PULSE
15	0V
16	0V

	E	C	B
Q101	2.1V	2.1V	0V
Q102	5V	4.1V	4.3V
Q103	4.58V	1.8V	3.9V
Q110	2.1V	2.4V	2.4V
Q111	1.1V	1.1V	1.7V
Q112	2.1V	1.8V	0V
Q113	2.1V	1.5V	0V
Q115	5V	0V	4.8V

IC311	
1	0V
2	6V
3	0V
4	0V
5	0V
6	0V
7	0V
8	0V
9	0V
10	6V

[Measuring Conditions]

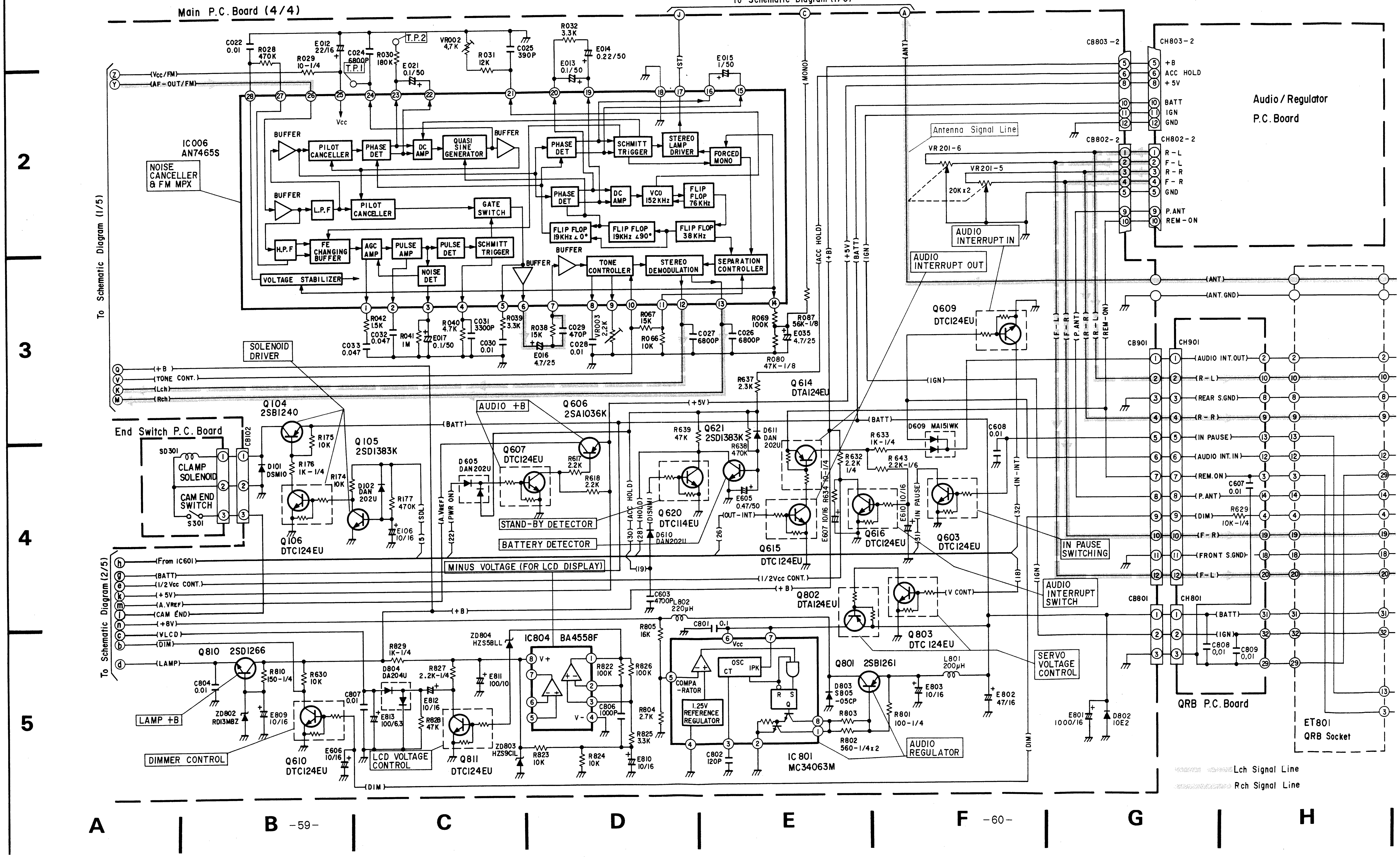
- Power Supply Voltage : DC14V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions :
  CD : Be playing back the 2nd Music of the test CD (YEDS-18)
  TUNER : No signal input
  FM : 98.1MHz
  MW : 999kHz
  LW : 216kHz

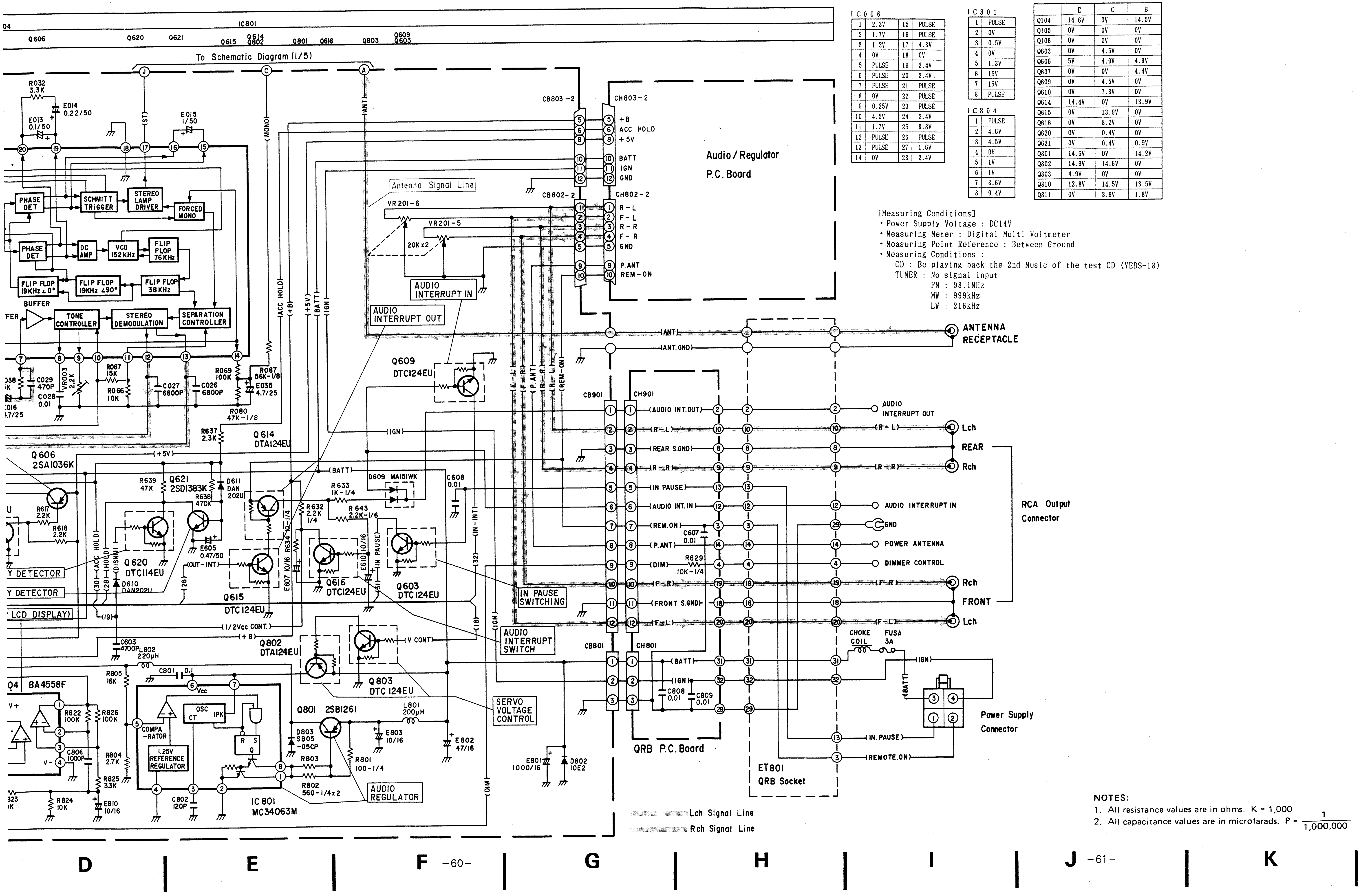
NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

Schematic Diagram (5/5)

IC	IC006, IC804, IC801
Transistor (Q)	Q810, Q104, Q106,Q610, Q105, Q811, Q607, Q606, Q620, Q621, Q615, Q614 Q802, Q801, Q616, Q803, Q609 Q603


1
2
3
4
5
A
B
C
D
E
F
G
H
To Schematic Diagram (1/5)
Main P.C. Board (4/4)
IC006
AN7465S
NOISE CANCELLER & FM MPX
BUFFER
PILOT CANCELLER
PHASE DET
DC AMP
QUASI SINE GENERATOR
SCHMITT TRIGGER
STEREO LAMP DRIVER
FORCED MONO
VCO 152KHz
FLIP FLOP 76KHz
L.P.F
GATE SWITCH
H.P.F
FE CHANGING BUFFER
AGC AMP
PULSE AMP
PULSE DET
NOISE DET
VOLTAGE STABILIZER
FLIP FLOP 19KHz ∠0°
FLIP FLOP 19KHz ∠90°
FLIP FLOP 38KHz
TONE CONTROLLER
STEREO DEMODULATION
SEPARATION CONTROLLER
T.P.1
T.P.2
Vcc/FM
AF-OUT/FM
Antenna Signal Line
VR 201-6
VR 201-5
20K x 2
CB803-2
CH803-2
+B
ACC HOLD
+5V
BATT
IGN
GND
CB802-2
CH802-2
R-L
F-L
R-R
F-R
P.ANT
REM-ON
Audio / Regulator P.C. Board
AUDIO INTERRUPT IN
AUDIO INTERRUPT OUT
ANT
ANT.GND
Q609 DTC124EU
CB901
CH901
AUDIO INT.OUT
REAR S.GND
IN PAUSE
AUDIO INT.IN
REM.ON
DIM
FRONT S.GND
SOLENOID DRIVER
Q104 2SB1240
Q105 2SD1383K
Q106 DTC124EU
End Switch P.C. Board
CB102
SD301
CLAMP SOLENOID
CAM END SWITCH
S301
AUDIO +B
Q606 2SA1036K
Q607 DTC124EU
STAND-BY DETECTOR
BATTERY DETECTOR
MINUS VOLTAGE (FOR LCD DISPLAY)
Q620 DTC114EU
Q621 2SD1383K
Q614 DTA124EU
Q615 DTC124EU
Q616 DTC124EU
Q603 DTC124EU
IN PAUSE SWITCHING
AUDIO INTERRUPT SWITCH
To Schematic Diagram (2/5)
From IC601
1/2Vcc CONT.
A.VREF
CAM END
+8V
VLCD
LAMP
Q810 2SD1266
LAMP +B
DIMMER CONTROL
Q610 DTC124EU
LCD VOLTAGE CONTROL
Q811 DTC124EU
IC804 BA4558F
Q802 DTA124EU
Q803 DTC124EU
V CONT
SERVO VOLTAGE CONTROL
IC801 MC34063M
COMPA-RATOR
1.25V REFERENCE REGULATOR
OSC
Q801 2SB1261
AUDIO REGULATOR
CB801
CH801
QRB P.C. Board
ET801 QRB Socket
Lch Signal Line
Rch Signal Line


IC801
Q606
Q620
Q621
Q615
Q614
Q802
Q801
Q616
Q803
Q609
Q603
To Schematic Diagram (1/5)
R032 3.3K
E014 0.22/50
E013 0.1/50
E015 1/50
(ST)
(MONO)
(ANT)
PHASE DET
SCHMITT TRiGGER
STEREO LAMP DRIVER
FORCED MONO
DC AMP
VCO 152KHz
FLIP FLOP 76KHz
FLIP FLOP 19KHz ∠0°
FLIP FLOP 19KHz ∠90°
FLIP FLOP 38KHz
BUFFER
TONE CONTROLLER
STEREO DEMODULATION
SEPARATION CONTROLLER
C029 470P
C028 0.01
VR003 2.2K
R067 15K
R066 10K
C027 6800P
C026 6800P
R069 100K
R087 56K-1/8
E035 4.7/25
R080 47K-1/8
R637 2.3K
Q614 DTA124EU
Q606 2SA1036K
R617 2.2K
R618 2.2K
R639 47K
Q621 2SD1383K
R638 470K
D611 DAN 202U
E605 0.47/50
Q620 DTC114EU
D610 DAN202U
Q615 DTC124EU
R632 2.2K 1/4
R633 1K-1/4
R643 2.2K-1/6
R634 10-1/4
E607 10/16
E610 10/16
Q616 DTC124EU
Q603 DTC124EU
D609 MA151WK
C608 0.01
Q609 DTC124EU
Antenna Signal Line
VR201-6
VR201-5
20K×2
AUDIO INTERRUPT IN
AUDIO INTERRUPT OUT
(ACC HOLD)
(+B)
(+5V)
(BATT)
(IGN)
(+5V)
(OUT-INT)
(1/2Vcc CONT.)
(V CONT)
(IN-INT)
(IN PAUSE)
(DIM)
Y DETECTOR
Y DETECTOR
LCD DISPLAY)
C603 4700P
L802 220μH
C801 0.1
R805 16K
BA4558F
R822 100K
R826 100K
C806 1000P
R804 2.7K
R825 3.3K
R824 10K
E810 10/16
COMPA-RATOR
OSC
CT
IPK
1.25V REFERENCE REGULATOR
C802 120P
IC 801 MC34063M
Q802 DTA124EU
Q803 DTC 124EU
Q801 2SB1261
D803 SB05-05CP
E803 10/16
R803
R802 560-1/4×2
R801 100-1/4
L801 200μH
E802 47/16
AUDIO REGULATOR
SERVO VOLTAGE CONTROL
AUDIO INTERRUPT SWITCH
IN PAUSE SWITCHING
E801 1000/16
D802 10E2
CB803-2
CH803-2
+B
ACC HOLD
+5V
BATT
IGN
GND
Audio / Regulator P.C. Board
CB802-2
CH802-2
R-L
F-L
R-R
F-R
GND
P.ANT
REM-ON
(ANT)
(ANT.GND)
ANTENNA RECEPTACLE
CB901
CH901
(AUDIO INT.OUT)
(R-L)
(REAR S.GND)
(R-R)
(IN PAUSE)
(AUDIO INT.IN)
(REM.ON)
(P.ANT)
(DIM)
(F-R)
(FRONT S.GND)
(F-L)
C607 0.01
R629 10K-1/4
AUDIO INTERRUPT OUT
Lch
REAR
Rch
AUDIO INTERRUPT IN
GND
POWER ANTENNA
DIMMER CONTROL
Rch
FRONT
Lch
RCA Output Connector
CB801
CH801
(BATT)
(IGN)
C808 0.01
C809 0.01
CHOKE COIL
FUSA 3A
(IGN)
(BATT)
Power Supply Connector
(IN.PAUSE)
(REMOTE.ON)
QRB P.C. Board
ET801 QRB Socket
Lch Signal Line
Rch Signal Line
D
E
F
G
H
I
J
K

IC006

1	2.3V	15	PULSE
2	1.7V	16	PULSE
3	1.2V	17	4.8V
4	0V	18	0V
5	PULSE	19	2.4V
6	PULSE	20	2.4V
7	PULSE	21	PULSE
8	0V	22	PULSE
9	0.25V	23	PULSE
10	4.5V	24	2.4V
11	1.7V	25	8.8V
12	PULSE	26	PULSE
13	PULSE	27	1.6V
14	0V	28	2.4V

IC801

1	PULSE
2	0V
3	0.5V
4	0V
5	1.3V
6	15V
7	15V
8	PULSE

IC804

1	PULSE
2	4.6V
3	4.5V
4	0V
5	1V
6	1V
7	8.6V
8	9.4V

	E	C	B
Q104	14.6V	0V	14.5V
Q105	0V	0V	0V
Q106	0V	0V	0V
Q603	0V	4.5V	0V
Q606	5V	4.9V	4.3V
Q607	0V	0V	4.4V
Q609	0V	4.5V	0V
Q610	0V	7.3V	0V
Q614	14.4V	0V	13.9V
Q615	0V	13.9V	0V
Q616	0V	8.2V	0V
Q620	0V	0.4V	0V
Q621	0V	0.4V	0.9V
Q801	14.6V	0V	14.2V
Q802	14.6V	14.6V	0V
Q803	4.9V	0V	0V
Q810	12.8V	14.5V	13.5V
Q811	0V	3.6V	1.8V

[Measuring Conditions]

- Power Supply Voltage : DC14V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions :
  - CD : Be playing back the 2nd Music of the test CD (YEDS-18)
  - TUNER : No signal input
    - FM : 98.1MHz
    - MW : 999kHz
    - LW : 216kHz

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$

Electrical Parts List

Resistor : Carbon resistors under 1/4 watts are not mentioned in the parts list, please confirm them by schematic diagram.
Capacitor : μF = microfarads, pF = picofarads

Abbreviations

RES. =	Resistor	CAP. =	Capacitor
C.F. =	Carbon Film	ELY. =	Electrolytic
M.F. =	Metal Film	CER. =	Ceramic
M.O. =	Metal Oxide Film	MYL. =	Mylar
M.P. =	Metal Plate	TAN. =	Tantalum
TR. =	Transistor	POLY. =	Polystyrol
TRANS. =	Transformer	PP. =	Polypropylene
CP. =	Chip	PLT. =	Polyethylene
		PF. =	Polyester Film

Main P. C. Board

IC's

Symbol No.	Part No.	Description
IC001	51T40941U03	MC14066BFL1
IC002	51T15853W02	LC7218M
IC003	51T35087W02	35087W02
IC006	51T94316F02	AN7465S
IC007	51T94121F01	BA4558F
or	51T93336F01	NJM4558M
IC008	51T93332F01	NJM2903M
IC009	51T93333F01	NJM2904M
IC010	51T93333F01	NJM2904M
IC101	51T25985W01	TC9236F
IC102	51T25984W01	TA8191F
IC103	51T15264W01	TCA0372M
IC104	51T15264W01	TCA0372M
IC105	51T15264W01	TCA0372M
IC106	51T35105W02	SM5840CS
IC107	51T25676W01	μPD6376
IC109	51T35229W01	TC7SU04F
IC201	51T40941U03	MC14066BFL1
IC202	51T25154W01	BA15532F
IC205	51T94121F01	BA4558F
or	51T93336F01	NJM4558M
IC301	51T92001F01	BA4560F
or	51T93338F01	NJM4560E
IC501	51T25699W23	25699W23
or	51T25681W01	25681W01
IC502	51T35086W02	μPD74HC373
IC503	51T84723F02	LC3516AML
or	51T90640F01	CXK5816M
IC504	51T93532F08	TC4S30F
IC505	51T93532F04	TC4S81F
IC601	51T25699W17	25699W17
or	51T25829W01	25829W01
IC602	51T95014F05	S-8052ALR-LF
IC801	51T15510W01	MC34063M
IC802	51T80338F01	NJM7805FA
IC804	51T94121F01	BA4558F
or	51T93336F01	NJM4558M

Transistors

Symbol No.	Part No.	Description
Q001	48T94606F03	CP., DTC124EU
Q003	48T94606F06	CP., DTC114EU
Q004	48T73888F13	CP., FMC3
Q005	48T94606F03	CP., DTC124EU
Q006	48T90181F05	2SD1993
Q007	48T90181F05	2SD1993
Q008	48T90181F05	2SD1993
Q009	48T90181F05	2SD1993
Q010	48T73888F09	CP., FMG2
Q012	48T52438F01	CP., 2SD601A
Q013	48T84234F03	2SB1238
Q014	48T94606F06	CP., DTC114EU
Q015	48T84234F03	2SB1238
Q016	48T15289W03	2SD2008
Q017	48T83415F03	2SD1858
Q018	48T73888F13	CP., FMC3
Q023	48T73888F10	CP., FMG4
Q024	48T73888F10	CP., FMG4
Q031	48T94606F03	CP., DTC124EU
Q033	48T94606F05	CP., DTC114TU
Q034	48T94606F05	CP., DTC114TU
Q035	48T94606F53	CP., DTA124EU
Q036	48T94606F03	CP., DTC124EU
Q037	48T94606F53	CP., DTA124EU
Q038	48T94606F05	CP., DTC114TU
Q040	48T94606F62	CP., DTA144TU
Q041	48T94606F03	CP., DTC124EU
Q042	48T73888F09	CP., FMG2
Q043	48T94606F03	CP., DTC124EU
Q044	48T52438F01	CP., 2SD601A
Q045	48T63420F01	CP., 2SA1037K
Q101	48T94606F03	CP., DTC124EU
Q102	48T63420F01	CP., 2SA1037K
Q103	48T84238F03	2SB1240
Q104	48T84238F03	2SB1240
Q105	48T81552F01	CP., 2SD1383K
Q106	48T94606F03	CP., DTC124EU
Q107	48T94606F53	CP., DTA124EU
Q108	48T94606F03	CP., DTC124EU
Q110	48T94606F06	CP., DTC114EU
Q111	48T63417F01	CP., 2SC2412K
Q112	48T94606F05	CP., DTC114TU
Q113	48T94606F05	CP., DTC114TU
Q115	48T94606F53	CP., DTA124EU
Q201	48T63788F04	CP., 2SD1328
Q202	48T63788F04	CP., 2SD1328

Symbol No.	Part No.	Description
Q503	48T94606F03	CP., DTC124EU
Q504	48T94606F11	CP., DTC124TU
Q601	48T94606F03	CP., DTC124EU
Q602	48T94606F03	CP., DTC124EU
Q603	48T94606F03	CP., DTC124EU
Q606	48T63419F01	CP., 2SA1036K
Q607	48T94606F03	CP., DTC124EU
Q609	48T94606F03	CP., DTC124EU
Q610	48T94606F03	CP., DTC124EU
Q611	48T94606F03	CP., DTC124EU
Q614	48T94606F53	CP., DTA124EU
Q615	48T94606F03	CP., DTC124EU
Q616	48T94606F03	CP., DTC124EU
Q620	48T94606F06	CP., DTC114EU
Q621	48T81552F01	CP., 2SD1383K
Q801	48T15511W02	CP., 2SB1261
Q802	48T94606F53	CP., DTA124EU
Q803	48T94606F03	CP., DTC124EU
Q810	48T56031F12	2SD1266
Q811	48T94606F03	CP., DTC124EU

Diodes

Symbol No.	Part No.	Description
D001	48T95117F01	CP., MA713
D003	48T52446F01	CP., MA151WK
D005	48T94608F03	CP., DAN202U
D008	48T94608F03	CP., DAN202U
D101	48T15512W01	CP., DSM10
D102	48T94608F03	CP., DAN202U
D103	48T94608F03	CP., DAN202U
D104	48T44813F02	MA165
D601	48T94608F03	CP., DAN202U
D602	48T95117F01	CP., MA713
D605	48T94608F03	CP., DAN202U
D609	48T52446F01	CP., MA151WK
D610	48T94608F03	CP., DAN202U
D611	48T94608F03	CP., DAN202U
D802	48C40235G02	10E2
D803	48T15702W01	CP., SB05-05CP
D804	48T94608F01	CP., DA204U
ZD001	48T62934F19	Zener, CP. RD5.1MB2
ZD002	48T25766W25	Zener, HZS9C2L
ZD003	48T25766W01	Zener, HZS6A1L
ZD004	48T25766W25	Zener, HZS9C2L
ZD603	48T25801W12	Zener, HZS5CLL
ZD802	48T62934F49	Zener, CP. RD13MB2
ZD803	48T25766W24	Zener, HZS9C1L
ZD804	48T25801W11	Zener, HZS5BLL

Buzzer / Thermistor

Symbol No.	Part No.	Description
BZ601	50T25148W01	CB13PA-X
TH601	48T93439F06	Thermistor, 100K ohm

Coils

Symbol No.	Part No.	Description
L001	24T25798W13	Inductor, 1mH
L801	24T16271W13	RCR875D 220μH
L802	24T16271W13	RCR875D 220μH

Crystals

Symbol No.	Part No.	Description
X001	91T25773W43	7.2MHz
X002	91T25773W44	CER. Lock, 7.372MHz
X003	91T15857W01	CER. Lock, 19KHz
X101	91T25806W92	16.9344MHz
X601	91T25773W42	7.15909MHz

Capacitors

Symbol No.	Part No.	Description	
C001	08S65128F69	CP.,	0.01μF
E001	23S61523F29	ELY.,	1μF / 50V
C002	08S65128F69	CP.,	0.01μF
E002	23S61523F13	ELY.,	22μF / 16V
C003	08S65128F73	CP.,	0.033μF
C004	08T15399W02	CP.,	0.033μF
E004	23T74437F46	TAN.,	0.33μF / 35V
C005	08T15399W02	CP.,	0.033μF
C006	08T90316F29	TF,	0.1μF
E006	23S61523F34	ELY.,	100μF / 10V
C007	08S65128F61	CP.,	2200pF
E007	23S61523F05	ELY.,	22μF / 6.3V
C008	08T90316F17	TF,	0.1μF
E008	23T25149W05	ELY.,	1μF / 50V
C009	08T15399W03	CP.,	0.047μF

Symbol No.	Part No.	Description
E009	23T25149W05	ELY., 1μF / 50V
C010	08S65128F72	CP., 0.022μF
E010	23S61523F15	ELY., 47μF / 16V
E011	23S61523F12	ELY., 10μF / 16V
E012	23S61523F13	ELY., 22μF / 16V
C013	08S65128F69	CP., 0.01μF
E013	23S61523F25	ELY., 0.1μF / 50V
C014	08S65128F69	CP., 0.01μF
E014	23S61523F26	ELY., 0.22μF / 50V
C015	08S65128F69	CP., 0.01μF
E015	23S61523F29	ELY., 1μF / 50V
C016	08T90316F27	TF, 0.068μF
E016	23S61523F17	ELY., 4.7μF / 25V
C017	08S65128F71	CP., 0.015μF
E017	23S61523F25	ELY., 0.1μF / 50V
C018	08S65128F69	CP., 0.01μF
C019	08S82122F23	CP., 27pF
C020	08S82122F23	CP., 27pF
E020	23S61523F12	ELY., 10μF / 16V
C021	08S65128F69	CP., 0.01μF
E021	23S61523F25	ELY., 0.1μF / 50V
C022	08S65128F69	CP., 0.01μF
E022	23S61523F12	ELY., 10μF / 16V
E023	23S61523F12	ELY., 10μF / 16V
C024	08S65128F67	CP., 6800pF
E024	23S61523F12	ELY., 10μF / 16V
C025	08T52448F03	PP., 390pF
E025	23S61523F25	ELY., 0.1μF / 50V
C026	08S65128F67	CP., 6800pF
E026	23S61523F29	ELY., 1μF / 50V
C027	08S65128F67	CP., 6800pF
E027	23S61523F29	ELY., 1μF / 50V
C028	08S65128F69	CP., 0.01μF
E028	23S61523F29	ELY., 1μF / 50V
C029	08S65128F51	CP., 470pF
C030	08S65128F69	CP., 0.01μF
C031	08S65128F63	CP., 3300pF
C032	08T15399W03	CP., 0.047μF
C033	08T15399W03	CP., 0.047μF
E033	23S61523F12	ELY., 10μF / 16V
C034	08S65128F65	CP., 4700pF
E034	23S61523F12	ELY., 10μF / 16V
C035	08S65128F65	CP., 4700pF
E035	23S57422F08	ELY., 4.7μF / 25V
C036	08T15399W01	CP., 0.022μF
C040	23T82372F19	ELY., (B.P) 2.2μF / 50V
E040	23S61523F29	ELY., 1μF / 50V
C041	08S65128F72	CP., 0.022μF
C042	08S65128F69	CP., 0.01μF
C043	08S65128F69	CP., 0.01μF
C044	08S65128F61	CP., 2200pF
C045	08S65128F69	CP., 0.01μF

Symbol No.	Part No.	Description
C046	08T74293F49	CER., 1000pF
C050	08T74293F57	CER., 4700pF
C053	08S65128F69	CP., 0.01μF
C101	08S65128F69	CP., 0.01μF
E101	23S61523F08	ELY., 100μF / 6.3V
E102	23T74437F32	TAN., 10μF / 16V
C103	08S82122F13	CP., 10pF
E103	23S61523F12	ELY., 10μF / 16V
C104	08S82122F13	CP., 10pF
E104	23T74437F32	TAN., 10μF / 16V
C105	08T15399W02	CP., 0.033μF
E105	23S61523F12	ELY., 10μF / 16V
C106	08T15399W02	CP., 0.033μF
E106	23T25149W09	ELY., 10μF / 16V
C107	08S65128F35	CP., 100pF
E107	23T74437F32	TAN., 10μF / 16V
C108	08S65128F69	CP., 0.01μF
E108	23S61523F15	ELY., 47μF / 16V
C109	08S65128F69	CP., 0.01μF
E109	23S61523F15	ELY., 47μF / 16V
C110	08S65128F69	CP., 0.01μF
E110	23S61523F17	ELY., 4.7μF / 25V
C111	08S65128F57	CP., 1000pF
E111	23T25149W17	ELY., 47μF / 6.3V
E112	23T25149W17	ELY., 47μF / 6.3V
C113	08T15399W01	CP., 0.022μF
E113	23T25149W09	ELY., 10μF / 16V
C114	08S65128F64	CP., 3900pF
E114	23T25149W09	ELY., 10μF / 16V
C115	08S65128F76	CP., 0.1μF
C116	08S65128F43	CP., 220pF
C117	08S65128F62	CP., 2700pF
E117	23S61523F28	ELY., 0.47μF / 50V
C118	08T15399W03	CP., 0.047μF
E118	23T74437F32	TAN., 10μF / 16V
C119	08S65128F29	CP., 56pF
E119	23T74437F32	TAN., 10μF / 16V
C120	08S65128F69	CP., 0.01μF
E120	23S61523F12	ELY., 10μF / 16V
C121	08S65128F13	CP., 12pF
E121	23S61523F12	ELY., 10μF / 16V
C122	08S53332F53	CP., 0.033μF
C123	08T15807W05	CP., 0.1μF
C124	08S65128F07	CP., 5pF
C125	08S65128F69	CP., 0.01μF
C126	08T15807W05	CP., 0.1μF
C127	08T15807W05	CP., 0.1μF
C128	08S65128F69	CP., 0.01μF
E128	23T74437F32	TAN., 10μF / 16V
C129	08S65128F69	CP., 0.01μF
C130	08S65128F65	CP., 4700pF
C131	08S65128F74	CP., 0.047μF

Symbol No.	Part No.	Description
C132	08S65128F74	CP., 0.047μF
C133	08S65128F69	CP., 0.01μF
C135	08S65128F69	CP., 0.01μF
C136	08S65128F12	CP., 10pF
C140	08S53332F43	CP., 4700pF
C141	08T15807W05	CP., 0.1μF
E141	23T74437F32	TAN., 10μF / 16V
C142	08S65128F60	CP., 1800pF
C201	08S65128F25	CP., 39pF
E201	23T25149W09	ELY., 10μF / 16V
C202	08S65128F25	CP., 39pF
E202	23T25149W09	ELY., 10μF / 16V
C203	08S82122F21	CP., 22pF
C204	08S82122F21	CP., 22pF
C205	08S82122F49	CP., 330pF
C206	08S82122F49	CP., 330pF
C207	08S65128F59	CP., 1500pF
C208	08S65128F59	CP., 1500pF
E208	23T74437F32	TAN., 10μF / 16V
E212	23T25149W09	ELY., 10μF / 16V
C301	08S82122F57	CP., 680pF
C302	08S82122F57	CP., 680pF
C303	08S82122F45	CP., 220pF
E303	23T74437F32	TAN., 10μF / 16V
C304	08S82122F45	CP., 220pF
E304	23T74437F32	TAN., 10μF / 16V
E305	23T25149W09	ELY., 10μF / 16V
C502	08S53332F57	CP., 0.1μF
E502	23S61523F08	ELY., 100μF / 6.3V
C503	08S65128F76	CP., 0.1μF
C504	08S65128F35	CP., 100pF
C505	08S65128F35	CP., 100pF
C506	08S65128F35	CP., 100pF
C510	21C45322G15	CER., 27pF
C511	21C45322G15	CER., 27pF
C512	08T74293F41	CER., 220pF
E601	23T74437F32	TAN., 10μF / 16V
E602	23S61523F08	ELY., 100μF / 6.3V
C603	08S65128F65	CP., 4700pF
C604	08S65128F35	CP., 100pF
C605	08S65128F35	CP., 100pF
E605	23S61523F28	ELY., 0.47μF / 50V
C606	08S65128F69	CP., 0.01μF
E606	23S61523F12	ELY., 10μF / 16V
E607	23S61523F12	ELY., 10μF / 16V
C608	08S65128F69	CP., 0.01μF
C610	21C45322G15	CER., 27pF
E610	23S57422F09	ELY., 10μF / 16V
C611	21C45322G15	CER., 27pF
C801	08S65128F76	CP., 0.1μF
E801	23T25364W01	ELY., 1000μF / 16V
C802	08S65128F37	CP., 120pF

Symbol No.	Part No.	Description
E802	23S61523F15	ELY., 47μF / 16V
E803	23S61523F12	ELY., 10μF / 16V
C804	08S65128F69	CP., 0.01μF
E804	23T25051W20	ELY., 470μF / 10V
E805	23T74437F49	TAN., 1μF / 35V
C806	08S65128F57	CP., 1000pF
C807	08S65128F69	CP., 0.01μF
E809	23S61523F12	ELY., 10μF / 16V
E810	23S61523F12	ELY., 10μF / 16V
E811	23S61523F34	ELY., 100μF / 10V
E812	23S61523F12	ELY., 10μF / 16V
E813	23S61523F08	ELY., 100μF / 6.3V
E818	23T25149W17	ELY., 47μF / 6.3V

Resistors (All resistors are chip 1/10W ± 5% unless otherwise noted.)

R001	06S64995F53	1K ohm
R002	06S64995F53	1K ohm
R003	06S64995F77	10K ohm
R004	06S64995F37	220 ohm
R005	06S64995F53	1K ohm
R006	06S64995F65	3.3K ohm
R007	06S64995F05	10 ohm
R008	06S64995F75	8.2K ohm
R009	06S64995F71	5.6K ohm
R010	06S64995F53	1K ohm
R011	06S64996F02	100K ohm
R012	06S64995F53	1K ohm
R013	06S64995F71	5.6K ohm
R014	06S64995F85	22K ohm
R015	06S64995F53	1K ohm
R016	06S64995F47	560 ohm
R017	06S64995F93	47K ohm
R018	06S64995F73	6.8K ohm
R019	06S64995F73	6.8K ohm
R020	06S64996F02	100K ohm
R021	06S64996F02	100K ohm
R022	06S64995F65	3.3K ohm
R023	06T70072F53	1K ohm 1/4W
R024	06T70072F65	3.3K ohm 1/4W
R025	06T70072F65	3.3K ohm 1/4W
R026	06T70072F53	1K ohm 1/4W
R027	06S64995F65	3.3K ohm
R028	06S64996F18	470K ohm
R029	06T70072F05	10 ohm 1/4W
R030	06S64996F08	180K ohm
R031	06S64995F79	12K ohm
R032	06S64995F65	3.3K ohm
R033	06S64995F85	22K ohm

Symbol No.	Part No.	Description
R034	06S64995F93	47K ohm
R035	06S64995F77	10K ohm
R036	06S64995F79	12K ohm
R037	06S64995F79	12K ohm
R038	06S64995F81	15K ohm
R039	06S64995F65	3.3K ohm
R040	06S64995F69	4.7K ohm
R041	06S64996F26	1M ohm
R042	06S64995F57	1.5K ohm
R043	06S64995F77	10K ohm
R045	06S64996F02	100K ohm
R046	06S64995F81	15K ohm
R049	06S64995F65	3.3K ohm
R050	06S64995F65	3.3K ohm
R051	06S64995F77	10K ohm
R052	06S64995F77	10K ohm
R054	06S64996F14	330K ohm
R055	06S64995F41	330 ohm
R056	06S64996F02	100K ohm
R057	06S64996F02	100K ohm
R058	06S64995F73	6.8K ohm
R059	06S64995F53	1K ohm
R060	06S64995F53	1K ohm
R061	06S64996F22	680K ohm
R062	06S64996F22	680K ohm
R063	06S64996F02	100K ohm
R064	06S64996F02	100K ohm
R065	06S64995F85	22K ohm
R066	06S64995F77	10K ohm
R067	06S64995F81	15K ohm
R069	06S64996F02	100K ohm
R070	06T70072F29	100 ohm 1/4W
R072	06S64995F77	10K ohm
R073	06S64995F77	10K ohm
R074	06S64995F77	10K ohm
R075	06S64995F77	10K ohm
R076	06S64995F53	1K ohm
R077	06S64995F53	1K ohm
R078	06S64995F65	3.3K ohm
R080	06S53330F93	47K ohm 1/8W
R087	06S53330F95	56K ohm 1/8W
R088	06S64996F26	1M ohm
R089	06S64996F26	1M ohm
R090	06S64995F76	9.1K ohm
R091	06S64995F77	10K ohm
R092	06S64995F76	9.1K ohm
R093	06S64995F77	10K ohm
R094	06S64995F77	10K ohm
R098	06S64995F81	15K ohm
R099	06S64995F81	15K ohm
R101	06S64995F73	6.8K ohm
R102	06S64996F18	470K ohm

Symbol No.	Part No.	Description
R103	06S64995F39	270 ohm
R105	06S64995F89	33K ohm
R106	06S64995F85	22K ohm
R107	06S64996F10	220K ohm
R108	06S64996F02	100K ohm
R109	06S64995F73	6.8K ohm
R110	06S64995F57	1.5K ohm
R111	06S64995F83	18K ohm
R112	06S64995F91	39K ohm
R113	06S64995F53	1K ohm
R114	06S64996F10	220K ohm
R115	06S64995F77	10K ohm
R116	06S64995F93	47K ohm
R117	06S64996F30	2.2M ohm
R118	06S64995F89	33K ohm
R119	06S64995F99	82K ohm
R120	06S64995F77	10K ohm
R121	06S64995F87	27K ohm
R122	06S64995F63	2.7K ohm
R123	06S64996F12	270K ohm
R124	06S64995F83	18K ohm
R125	06S64996F02	100K ohm
R126	06S64995F77	10K ohm
R127	06S64996F04	100K ohm
R128	06S64996F02	100K ohm
R129	06S64995F81	15K ohm
R130	06S64995F85	22K ohm
R131	06S64995F77	10K ohm
R132	06S64995F77	10K ohm
R133	06S64995F77	10K ohm
R134	06S64995F97	68K ohm
R135	06S64996F04	120K ohm
R136	06S64995F61	2.2K ohm
R137	06S64995F77	10K ohm
R138	06S64995F69	4.7K ohm
R139	06S64995F69	4.7K ohm
R140	06S64995F69	4.7K ohm
R141	06T70072F05	10 ohm 1/4W
R144	06S64995F53	1K ohm
R145	06S64995F47	560 ohm
R146	06S64995F81	15K ohm
R147	06S64995F85	22K ohm
R148	06S64995F85	22K ohm
R149	06S64995F77	10K ohm
R150	06S64995F77	10K ohm
R151	06S64995F85	22K ohm
R152	06S64995F85	22K ohm
R153	06S64995F77	10K ohm
R154	06S64995F77	10K ohm
R155	06S64995F85	22K ohm
R156	06S64995F85	22K ohm
R157	06S64995F77	10K ohm

Symbol No.	Part No.	Description
R158	06S64995F77	10K ohm
R159	06S64995F85	22K ohm
R160	06S64995F85	22K ohm
R161	06S64995F77	10K ohm
R162	06S64995F77	10K ohm
R163	06S64995F85	22K ohm
R164	06S64995F77	10K ohm
R165	06S64995F85	22K ohm
R166	06T70072F05	10 ohm 1/4W
R167	06S64996F04	120K ohm
R168	06T70072F05	10 ohm 1/4W
R169	06S64995F53	1K ohm
R170	06S64995F53	1K ohm
R171	06S64995F53	1K ohm
R172	06S64995F53	1K ohm
R173	06S64995F53	1K ohm
R174	06S64995F77	10K ohm
R175	06S64995F77	10K ohm
R176	06T70072F53	1K ohm 1/4W
R177	06S64996F18	470K ohm
R178	06S64995F65	3.3K ohm
R179	06S64995F69	4.7K ohm
R180	06S53330F77	10K ohm 1/8W
R181	06S53331F02	100K ohm 1/8W
R183	06S64996F10	220K ohm
R185	06S64995F83	18K ohm
R186	06S64995F53	1K ohm
R187	06S64995F53	1K ohm
R188	06S64995F65	3.3K ohm
R189	06S64996F18	470K ohm
R190	06S64995F93	47K ohm
R201	06S64996F08	180K ohm
R202	06S64996F08	180K ohm
R203	06S64995F79	12K ohm
R204	06S64995F79	12K ohm
R205	06T70072F61	2.2K ohm 1/4W
R206	06T70072F61	2.2K ohm 1/4W
R207	06S64995F37	220 ohm
R223	06S64995F93	47K ohm
R224	06S64995F93	47K ohm
R225	06S64995F83	18K ohm
R226	06S64995F83	18K ohm
R227	06S64996F02	100K ohm
R228	06S64996F02	100K ohm
R301	06S64995F89	33K ohm
R302	06S64995F89	33K ohm
R303	06S64995F72	6.2K ohm
R304	06S64995F72	6.2K ohm
R305	06S64995F83	18K ohm
R306	06S64995F83	18K ohm
R309	06S64995F77	10K ohm
R310	06S64995F77	10K ohm

Symbol No.	Part No.	Description
R501	06S64996F26	1M ohm
R502	06S64995F93	47K ohm
R503	06S64995F93	47K ohm
R505	06S64995F69	4.7K ohm
R506	06S64996F02	100K ohm
R507	06S64995F69	4.7K ohm
R508	06S53330F69	4.7K ohm 1/8W
R601	06S64995F73	6.8K ohm
R602	06S64995F69	4.7K ohm
R603	06S64995F69	4.7K ohm
R604	06S64996F02	100K ohm
R605	06S64996F02	100K ohm
R606	06S64996F02	100K ohm
R607	06S64996F02	100K ohm
R608	06S64995F75	8.2K ohm
R609	06S64995F75	8.2K ohm
R616	06S64995F77	10K ohm
R617	06S64995F61	2.2K ohm
R618	06S64995F85	22K ohm
R630	06S64995F77	10K ohm
R631	06S64996F02	100K ohm
R632	06T70072F61	2.2K ohm 1/4W
R633	06T70072F53	1K ohm 1/4W
R634	06T70072F05	10 ohm 1/4W
R637	06S64995F65	3.3K ohm
R638	06S64996F18	470K ohm
R639	06S64995F93	47K ohm
R640	06S64995F85	22K ohm
R641	06S64995F61	2.2K ohm
R642	06S64995F77	10K ohm
R701	06S64996F20	560K ohm
R702	06S64996F26	1M ohm
R703	06S64995F77	10K ohm
R704	06S64995F77	10K ohm
R705	06S64995F77	10K ohm
R708	06S64995F53	1K ohm
R709	06S64995F77	10K ohm
R710	06S64996F04	120K ohm
R711	06S64995F21	47 ohm
R712	06S64996F02	100K ohm
R713	06S64996F02	100K ohm
R714	06S64995F75	8.2K ohm
R801	06T70072F29	100 ohm 1/4W
R802	06T70072F47	560 ohm 1/4W
R803	06T70072F47	560 ohm 1/4W
R804	06S64995F63	2.7K ohm
R805	06S64995F82	16K ohm
R810	06T70072F33	150 ohm 1/4W
R822	06S64996F02	100K ohm
R823	06S64995F77	10K ohm
R824	06S64995F77	10K ohm
R825	06S64995F65	3.3K ohm

Symbol No.	Part No.	Description
R826	06S64996F02	100K ohm
R827	06T70072F61	2.2K ohm 1/4W
R828	06S64995F93	47K ohm
R829	06T70072F53	1K ohm 1/4W
VR002	18T45040F11	Variable, 4.7K ohm
VR003	18T42748F09	Variable, 2.2K ohm
VR004	18T45040F14	Variable, 15K ohm
VR005	18T42748F15	Variable, 22K ohm
VR101	18T15805W19	Volume, Metal 100K ohm
VR102	18T10024W09	Variable, 2.2K ohm
VR103	18T10024W11	Variable, 4.7K ohm
VR201 S601	18T15283W03	Volume, Rotary (TREBLE / BASS / FADER / POWER SWITCH)
VR202	18T25095W03	Volume, Metal 470 ohm

Front P. C. Board

IC's

IC251	51T25576W04	NJM4580E
IC401	51T25797W01	μPD7228AG
IC402	51T15268W03	L78LR05DFA

Transistors

Q401	48T62967F03	CP., DTC124K
Q402	48T94606F03	CP., DTC124EU
Q403	48T62967F03	CP., DTC124K
Q404	48T73023F01	CP., 2SD874A

Diode / Thermistor

ZD401	48T62934F38	Zener, CP. RD9.1HB3
TH401	48T93439F03	Thermistor, 10K ohm

Symbol No.	Part No.	Description

Lamps

PL401	65T25230W01	Pilot, 6.7V-85mA
PL402	65T25170W06	6V-70mA
PL403	65T25170W06	6V-70mA
PL404	65T25170W06	6V-70mA
PL405	65T25170W06	6V-70mA

LED's

LD401	48T16167W02	MBG4868K (GRN)
LD402	48T16167W02	MBG4868K (GRN)
LD403	48T16167W02	MBG4868K (GRN)
LD404	48T16167W02	MBG4868K (GRN)
LD405	48T16167W02	MBG4868K (GRN)
LD406	48T16167W02	MBG4868K (GRN)

Switches

S401	40T10876W12	Tact, SKHLAJ (⏭·UP)
S402	40T10876W12	Tact, SKHLAJ (TUNE)
S403	40T10876W12	Tact, SKHLAJ (A.P.I.)
S404	40T10876W12	Tact, SKHLAJ (T.INFO)
S405	40T10876W12	Tact, SKHLAJ (DX)
S406	40T10876W12	Tact, SKHLAJ (D.A.P.)
S407	40T10876W12	Tact, SKHLAJ (TUNER·BAND)
S408	40T10876W12	Tact, SKHLAJ (EJECT)
S409	40T10876W12	Tact, SKHLAJ (⏮·DN)
S410	40T10876W12	Tact, SKHLAJ (M1 / CLEAR)
S411	40T10876W12	Tact, SKHLAJ (M2 / P.T.M.)
S412	40T10876W12	Tact, SKHLAJ (M3 / O.T.M.)
S413	40T10876W12	Tact, SKHLAJ (M4 / M.I.X.)
S414	40T10876W12	Tact, SKHLAJ (M5 / REPEAT)
S415	40T10876W12	Tact, SKHLAJ (M6 / SCAN)
S416	40T10876W12	Tact, SKHLAJ (DISC ▶ / ‖)
S417	40T10876W12	Tact, SKHLAJ (RESET)

Symbol No.	Part No.	Description
Capacitors		
C251	08T90316F15	TF, 0.068μF
E251	23S61523F12	ELY., 10μF / 16V
C252	08T90316F15	TF, 0.068μF
C253	08S82122F37	CP., 100pF
C254	08S82122F37	CP., 100pF
C255	08S82122F21	CP., 22pF
C256	08S82122F21	CP., 22pF
C257	08T90316F22	TF, 0.027μF
C258	08T90316F22	TF, 0.027μF
C401	08T81833F03	CP., 1μF
C402	08T81833F03	CP., 1μF
C404	08S65128F69	CP., 0.01μF
C405	08S65128F69	CP., 0.01μF
C406	08S65128F69	CP., 0.01μF
C407	08S65128F69	CP., 0.01μF
C408	08S65128F69	CP., 0.01μF
C409	08S65128F69	CP., 0.01μF
Resistors (All resistors are chip 1/10W ± 5% unless otherwise noted.)		
R251	06S64995F53	1K ohm
R252	06S64995F53	1K ohm
R253	06S64995F77	10K ohm
R254	06S64995F77	10K ohm
R255	06S64995F77	10K ohm
R256	06S64995F77	10K ohm
R257	06S64996F26	1M ohm
R258	06S64996F26	1M ohm
R259	06S64995F53	1K ohm
R260	06S64995F53	1K ohm
R401	06T70072F17	33 ohm 1/4W
R403	06S64995F77	10K ohm
R404	06S64995F77	10K ohm
R405	06S64995F77	10K ohm
R406	06S64995F77	10K ohm
R407	06S64995F77	10K ohm
R408	06S64995F99	82K ohm
R409	06T70072F17	33 ohm 1/4W
R410	06T70072F14	24 ohm 1/4W
R411	06T70072F41	330 ohm 1/4W
R412	06T70072F41	330 ohm 1/4W
R413	06T70072F14	24 ohm 1/4W
R414	06T70072F23	56 ohm 1/4W
R415	06S53330F89	33K ohm 1/8W
R416	06S64995F77	10K ohm

Symbol No.	Part No.	Description
R417	06S64995F71	5.6K ohm
R418	06S64995F65	3.3K ohm
R419	06S64995F61	2.2K ohm
R420	06S64995F57	1.5K ohm
R421	06S64995F55	1.2K ohm
R422	06S64995F89	33K ohm
R423	06S64995F77	10K ohm
R424	06S64995F71	5.6K ohm
R425	06S64995F65	3.3K ohm
R426	06S64995F61	2.2K ohm
R427	06S64995F57	1.5K ohm
R428	06S64995F55	1.2K ohm
R429	06S64995F77	10K ohm
R430	06T70072F23	56 ohm 1/4W
R432	06T70072F43	390 ohm 1/4W
R435	06T70072F37	220 ohm 1/4W
VR251	18T16435W01	Volume, Slide 100K ohm
VR252	18T16435W01	Volume, Slide 100K ohm

Audio / Regulator P. C. Board

IC's

IC203	51T25154W01	BA15532F
IC204	51T92001F01	BA4560F
or	51T93338F01	NJM4560E
IC603	51T92166F02	S-8054ALO
IC803	51T90890F01	M5236ML

Transistors

Q203	48T62967F33	CP., DTC343T
Q204	48T62967F33	CP., DTC343T
Q604	48T94606F53	CP., DTA124EU
Q605	48T63417F01	CP., 2SC2412K
Q608	48T83415F03	2SD1858
Q804	48T84238F03	2SB1240
Q805	48T84238F03	2SB1240
Q806	48T94606F53	CP., DTA124EU
Q812	48T94581F01	CP., 2SA1576
Q813	48T62967F03	CP., DTC124K
Q814	48T80611F01	CP., 2SB1132
Q815	48T80611F01	CP., 2SB1132
Q816	48T94606F03	CP., DTC124EU
Q817	48T94606F03	CP., DTC124EU
Q818	48T94606F03	CP., DTC124EU

Symbol No.	Part No.	Description
Q819	48T94606F53	CP., DTA124EU
Q820	48T63420F01	CP., 2SA1037K
Q821	48T94606F03	CP., DTC124EU
Q822	48T94606F03	CP., DTC124EU
Diodes		
D603	48T52446F01	CP., MA151WK
D612	48T68828F11	1SS133
D805	48T94608F01	CP., DA204U
D806	48T15512W01	CP., DSM10
D807	48T94608F03	CP., DAN202U
D808	48T94608F03	CP., DAN202U
D809	48T94608F03	CP., DAN202U
D810	48T94608F03	CP., DAN202U
ZD601	48T62934F22	Zener, CP. RD5.6MB2
ZD602	48T25766W09	Zener, HZS6C3L
ZD805	48T62934F40	Zener, CP. RD10MB2
Capacitors		
E203	23T00180L25	ELY., 10μF / 50V
E204	23T00180L25	ELY., 10μF / 50V
E205	23T25149W09	ELY., 10μF / 16V
E206	23T25149W12	ELY., 47μF / 16V
E207	23S61523F12	ELY., 10μF / 16V
E210	23T25149W09	ELY., 10μF / 16V
E211	23T25149W12	ELY., 47μF / 16V
C601	08S65128F69	CP., 0.01μF
E603	23S61523F29	ELY., 1μF / 50V
E604	23S61523F12	ELY., 10μF / 16V
E608	23T16086W02	ELY., 330μF / 6.3V
C803	08S65128F76	CP., 0.1μF
C805	08S65128F69	CP., 0.01μF
E806	23T25149W13	ELY., 100μF / 10V
E814	23S61523F12	ELY., 10μF / 16V
E815	23S61523F28	ELY., 0.47μF / 50V
E816	23S61523F12	ELY., 10μF / 16V
E817	23S61523F12	ELY., 10μF / 16V

Symbol No.	Part No.	Description
Resistors (All resistors are chip 1/10W ± 5% unless otherwise noted.)		
R208	06S64995F77	10K ohm
R209	06S64995F85	22K ohm
R210	06S64995F85	22K ohm
R211	06S64995F77	10K ohm
R212	06S64995F77	10K ohm
R213	06S64995F91	39K ohm
R214	06S64995F91	39K ohm
R215	06S64995F37	220 ohm
R216	06S64995F37	220 ohm
R217	06S64995F53	1K ohm
R218	06S64995F53	1K ohm
R219	06S64995F53	1K ohm
R220	06S64995F53	1K ohm
R221	06S64995F85	22K ohm
R222	06S64995F85	22K ohm
R230	06S64995F77	10K ohm
R231	06S64995F85	22K ohm
R232	06S64995F85	22K ohm
R612	06S64995F77	10K ohm
R613	06T70072F65	3.3K ohm 1/4W
R614	06S64995F93	47K ohm
R615	06T70072F77	10K ohm 1/4W
R635	06S64995F77	10K ohm
R636	06S64995F99	82K ohm
R806	06T70072F37	220 ohm 1/4W
R807	06S64995F81	15K ohm
R808	06S64995F87	27K ohm
R809	06S64995F69	4.7K ohm
R811	06T70072F04	8.2 ohm 1/4W
R812	06T70072F04	8.2 ohm 1/4W
R813	06S64995F77	10K ohm
R814	06S64995F61	2.2K ohm
R815	06S64995F77	10K ohm
R816	06S64995F77	10K ohm
R817	06S64995F77	10K ohm
R818	06T70072F61	2.2K ohm 1/4W
R819	06S64995F85	22K ohm
R820	06T70072F69	4.7K ohm 1/4W
R821	06T70072F77	10K ohm 1/4W
R831	06S64995F77	10K ohm
R832	06S64995F77	10K ohm
R833	06S64995F61	2.2K ohm
R834	06S64996F10	220K ohm

QRB P. C. Board

Capacitors

Symbol No.	Part No.	Description
C607	08S65128F69	CP., 0.01μF
C808	08S40805F19	CER., 0.01μF
C809	08S40805F19	CER., 0.01μF

Resistor

Symbol No.	Part No.	Description
R629	06T70072F77	CP., 10K ohm 1/4W

Load / Photo P. C. Board

IC / Transistors

Symbol No.	Part No.	Description
IC311	51T15267W01	IC, LB1641
PT301	48T92913F01	Photo, PT360
PT302	48T92913F01	Photo, PT360
PT303	48T92913F01	Photo, PT360

Diode / LED's

Symbol No.	Part No.	Description
ZD301	48T15440W12	Zener, UTZJ6.2C
LD301	48T16057W02	LED, AN501-B1 (RED)
LD302	48T16057W02	LED, AN501-B1 (RED)
LD303	48T16057W02	LED, AN501-B1 (RED)

Capacitors

Symbol No.	Part No.	Description
C311	08S65128F69	CP., 0.01 μF
C312	08S65128F69	CP., 0.01 μF

Resistors (All resistors are chip 1/8W ± 5% unless otherwise noted.)

Symbol No.	Part No.	Description
R311	06S53330F43	390 ohm
R312	06S53330F47	560 ohm
R313	06S53331F02	100K ohm
R314	06S53331F02	100K ohm
R315	06S53331F02	100K ohm
R316	06T70072F01	4.7 ohm 1/4W
R317	06T70072F01	4.7 ohm 1/4W
R318	06S53330F47	560 ohm
R319	06S53331F02	100K ohm

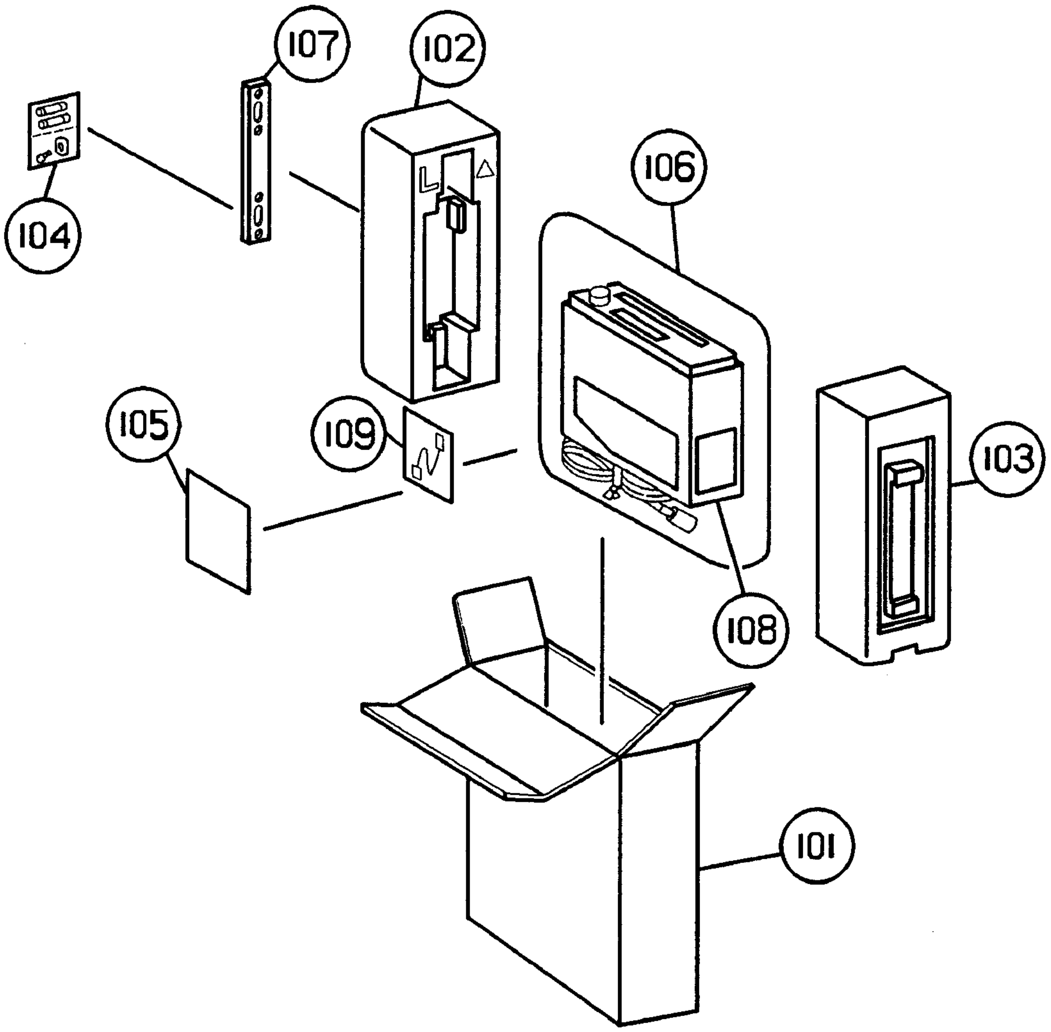
Miscellaneous

Symbol No.	Part No.	Description
ET801	01T25803W06	QRB Socket (18P)
BA601	60T15855W01	Battery, LIT. CR2450
LCD401	65T25960W01	LCD Display
HD201	88T15309W01	Pick Up Unit
M301	01V13100W97	Assy., Loading Motor (6V-210mA)
M302	59T91005F01	Motor, Spindle (2V-90mA)
M303	59T52973F03	Motor, Sled (6V-210mA)
S301	40T71025F03	Switch, Detector (CAM END)
S302	40T71025F01	Switch, Detector (LIMIT)
PT304	48T92913F01	Transistor, Photo PT360
LD304	48T16057W02	LED, AN501-B1 (RED)
SD301	01A90816F01	Assy., Clamp Solenoid

Packing Assembly Parts List

Symbol No.	Part No.	Description
101	56S22119W68	Carton, Packing (Individual)
102	56D22122W01	Tray, Packing (L)
103	56D22122W02	Tray, Packing (R)
104	01V31400W91	Assy., Kit
104-1	02B47353F01	Nut, Hex. (M5)
104-2	03S40012G66	Screw, Tapping (M5 x 20)
104-3	03B44963F03	Bolt, Hex. W/Washer (M5 x 10)
104-4	03A40155F05	Bolt, Hex. (M5 x 14)
104-5	03A40155F01	Bolt, Hex. (M5 x 8)
104-6	03A84814F04	Screw, Special (M2.6 x 18)
104-7	43A58272F04	Spacer
104-8	45A41684U01	Arm, Adapter
104-9	07A30081W01	Bracket, QRB (A)
104-10	07A30082W01	Bracket, QRB (B)
104-11	03S44205G34	Screw, Pan (M2.6 x 5)
105-1	68P21910W67	Owner's, Manual
105-2	68P21910W68	Installation, Manual
105-3	68P22493W38	RDS, Manual
106	56C40990T36	Sack, Polyethylene
107	07B64552F01	Bracket, Strap Receiver
108	01V31400W92	Assy., Case Mother
108-1	15D21598W01	Case, Mother
108-2	03A28015W01	Screw, Special (M2.6 x 6.7)
108-3	01T25804W06	Assy., QRB Connector
109	01T96095F01	Assy., Connector (4P)

Packing Method View

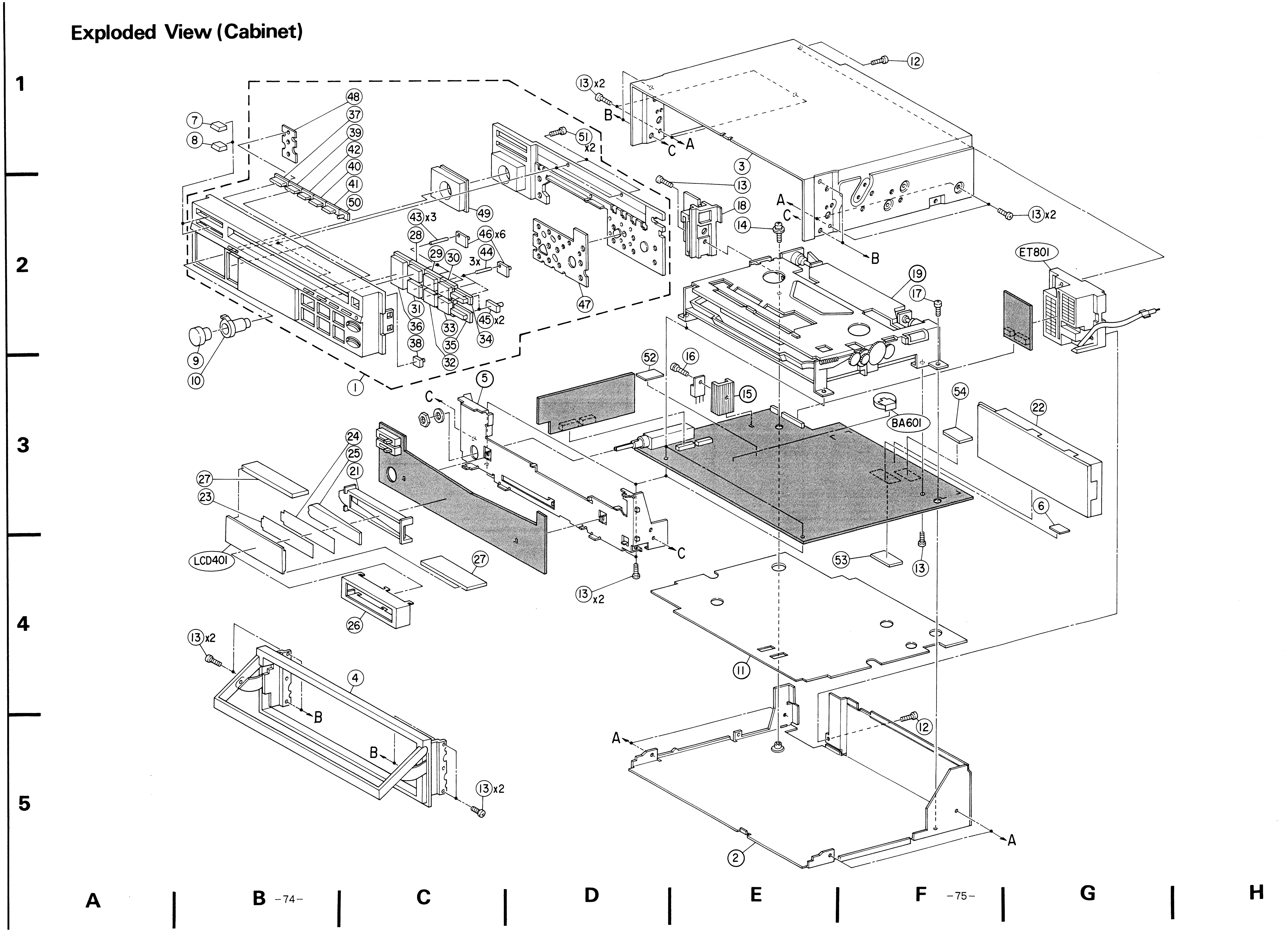


Cabinet Assembly Parts List

NOTE : The parts without part list are not supplied.

Symbol No.	Index	Part No.	Description
1	3-C	13D21690W04	Assy., Nosepiece
3	1-E	15C21584W04	Cover, Top
4	4-C	07C21606W01	Assy., Bracket Handle
6	3-G	14S58462F11	Insulator, Cover
7	1-B	36B13674W01	Knob, Slide
8	1-B	36B13674W02	Knob, Slide (B)
9	3-B	36A94114F01	Knob, Control (FRONT)
10	3-B	36A94115F01	Knob, Control (BACK)
12		03S52360F78	Screw, Pan (M2.6×8)
13		03S44205G34	Screw, Pan (M2.6×5)
14	2-E	03D40121T43	Screw, W/Double Washer (M2.6×6)
16	3-E	03D40014G49	Screw, W/Washer (M3×8)
17	2-F	03S44205G29	Screw, Pan (M2.6×6)
18	2-E	15B22125W01	Cover, P.C.Board
21	3-C	15B30048W01	Case, LCD
22	3-G	77C30794W01	FM/MW/LW Tuner Unit MB4R901B (FE001)
23	3-B	26A30047W01	Reflector, Sheet
24	3-C	26A30047W02	Reflector, Sheet
25	3-C	61A21582W01	Lens, LCD
26	4-C	07A30046W01	Bracket, Shield
27		75T35021W01	Rubber, Electric
28	2-C	36C21613W09	Knob, Preset 1/CLEAR
29	2-C	36C21613W10	Knob, Preset 2/P.T.M.
30	2-C	36C21613W11	Knob, Preset 3/O.T.M.
31	2-C	36C21613W12	Knob, Preset 4/M.I.X.
32	3-C	36C21613W13	Knob, Preset 5/REPEAT
33	2-C	36C21613W14	Knob, Preset 6/SCAN
34	2-C	36C21572W01	Knob, Push TUNER
35	3-C	36C21572W03	Knob, Push DISC
36	2-C	36C21569W04	Knob, UP/DN
37	1-C	36B21574W03	Knob, TUNE
38	3-C	36A13658W01	Knob, EJECT
39	1-C	36B21695W03	Knob, A.P.I.
40	1-C	36B21696W02	Knob, DX
41	2-C	36B21697W01	Knob, D.A.P.
42	1-C	36B21696W03	Knob, T.INFO
43	2-C	61A11530W03	Lens, Indicator
44	2-C	61A11530W01	Lens, Indicator
45	2-C	36A21573W01	Knob, Push Base
46	2-C	36A21614W01	Knob, Preset Base
47	2-D	75B21698W01	Cushion, Knob
48	1-C	75B21698W02	Cushion, Knob
49	2-C	15B21694W03	Cover, Volume
50	2-C	13D21691W02	Nose, Reset
51	1-D	03S68555F07	Screw, Pan (M2×4)
52	3-D	14A38062W01	Insulator, Cover
53	4-F	14S94461F33	Insulator, Cover
54	3-F	14S20875W54	Insulator, Cover

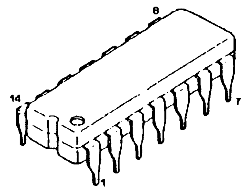
Exploded View (Cabinet)

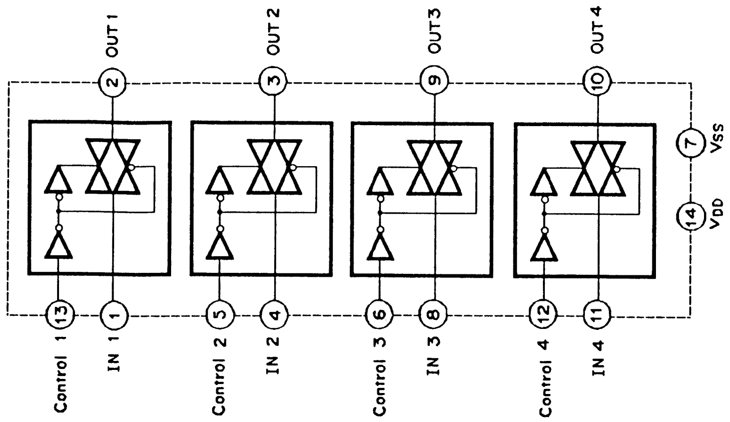


1
2
3
4
5
A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
12
13 x2
14
15
16
17
18
19
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43 x3
44
3x
45 x2
46 x6
47
48
49
50
51 x2
52
53
54
ET801
BA601
LCD401
A
B
C

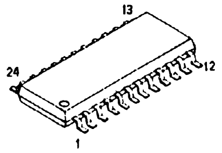
Semi - Conductor Lead Identifications

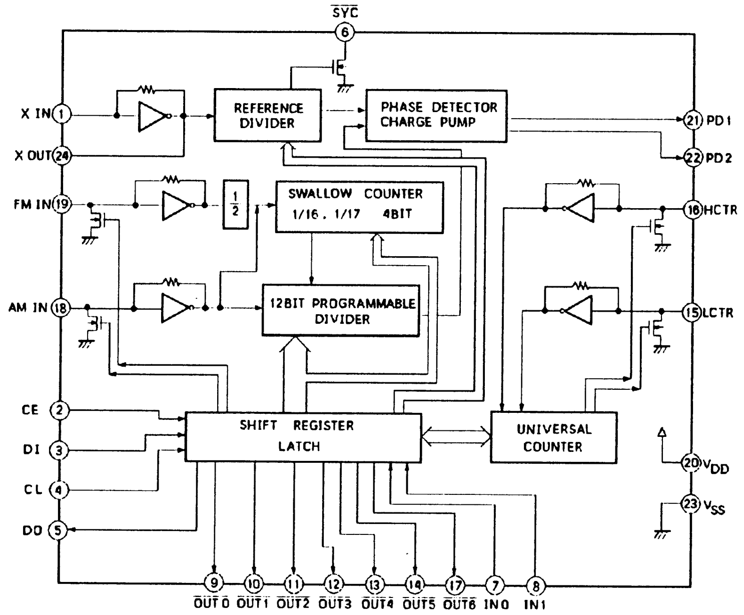
MC14066BFL1 : IC001, 201



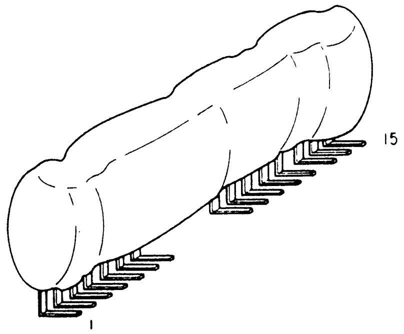

OUT 1
OUT 2
OUT 3
OUT 4
2
3
9
10
7
VSS
14
VDD
13
1
5
4
6
8
12
11
Control 1
IN 1
Control 2
IN 2
Control 3
IN 3
Control 4
IN 4

LC7218M : IC002



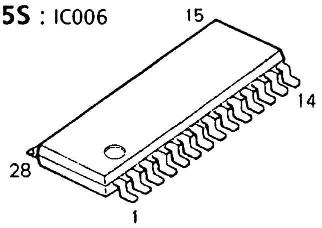

SYC
6
X IN 1
X OUT 24
FM IN 19
AM IN 18
CE 2
DI 3
CL 4
DO 5
REFERENCE DIVIDER
PHASE DETECTOR CHARGE PUMP
1/2
SWALLOW COUNTER 1/16, 1/17 4BIT
12BIT PROGRAMMABLE DIVIDER
SHIFT REGISTER LATCH
UNIVERSAL COUNTER
21 PD1
22 PD2
16 HCTR
15 LCTR
20 VDD
23 VSS
9 10 11 12 13 14 17 7 8
OUT0 OUT1 OUT2 OUT3 OUT4 OUT5 OUT6 IN0 IN1

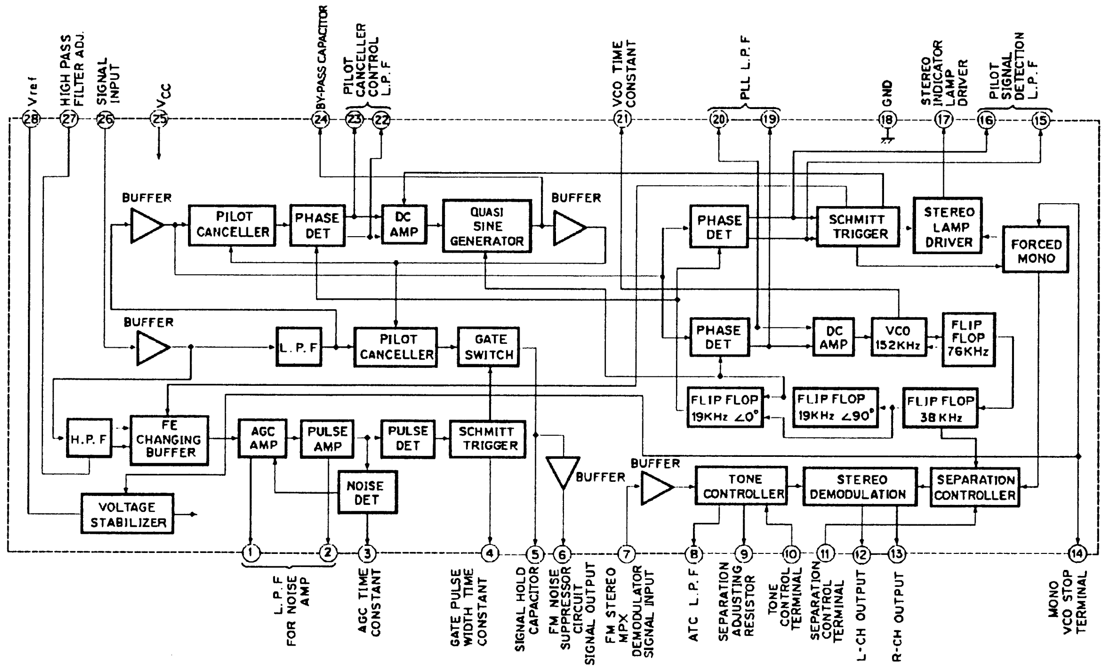
35087W02 : IC003



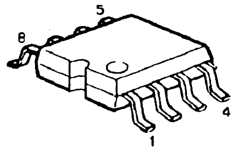
PIN NO.	CORD ADDRESS	I/O
1	ARI - SK LED	O
2	ARI - DK LED	O
3	RDS LED	O
4	D · GND	–
5	CLOCK OUT	O
6	DATA OUT	O
7	DATA START	O
8	NC	–
9	$\overline{\text{RES}}$	I
10	1/2 V_{CC}	–
11	OSC	I
12	FM + 5V	–
13	A · GND	–
14	INPUT	I
15	FM + B	–

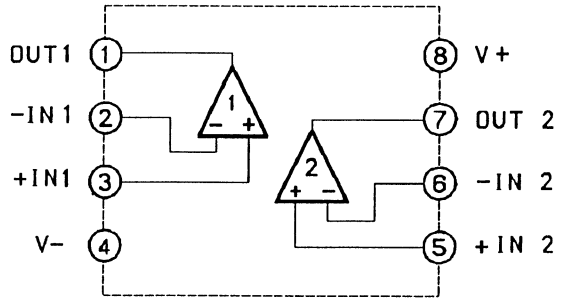
AN7465S : IC006



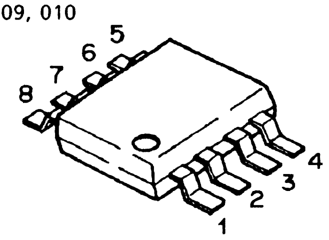

Vref 28
HIGH PASS FILTER ADJ. 27
SIGNAL INPUT 26
VCC 25
BY-PASS CAPACITOR 24
PILOT CANCELLER CONTROL L.P.F 23 22
VCO TIME CONSTANT 21
PLL L.P.F 20 19
GND 18
STEREO INDICATOR LAMP DRIVER 17
PILOT SIGNAL DETECTION L.P.F 16 15
BUFFER
PILOT CANCELLER
PHASE DET
DC AMP
QUASI SINE GENERATOR
BUFFER
PHASE DET
SCHMITT TRIGGER
STEREO LAMP DRIVER
FORCED MONO
BUFFER
L.P.F
PILOT CANCELLER
GATE SWITCH
PHASE DET
DC AMP
VCO 152KHz
FLIP FLOP 76KHz
FLIP FLOP 19KHz ∠0°
FLIP FLOP 19KHz ∠90°
FLIP FLOP 38KHz
H.P.F
FE CHANGING BUFFER
AGC AMP
PULSE AMP
PULSE DET
SCHMITT TRIGGER
NOISE DET
VOLTAGE STABILIZER
BUFFER
BUFFER
TONE CONTROLLER
STEREO DEMODULATION
SEPARATION CONTROLLER
1 2 L.P.F FOR NOISE AMP
3 AGC TIME CONSTANT
4 GATE PULSE WIDTH TIME CONSTANT
5 SIGNAL HOLD CAPACITOR
6 FM NOISE SUPPRESSOR CIRCUIT SIGNAL OUTPUT
7 FM STEREO MPX DEMODULATOR SIGNAL INPUT
8 ATC L.P.F
9 SEPARATION ADJUSTING RESISTOR
10 TONE CONTROL TERMINAL
11 SEPARATION CONTROL TERMINAL
12 L-CH OUTPUT
13 R-CH OUTPUT
14 MONO VCO STOP TERMINAL

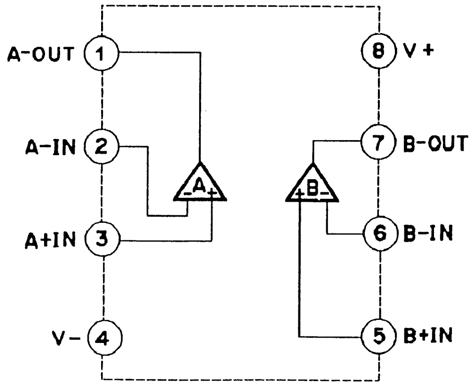
BA4558F : IC007, 205, 804
BA15532F : IC202, 203
BA4560F : IC204, 301



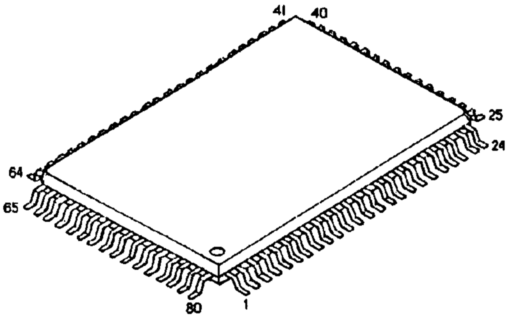

OUT1 1
-IN1 2
+IN1 3
V- 4
8 V+
7 OUT 2
6 -IN 2
5 +IN 2
1
2

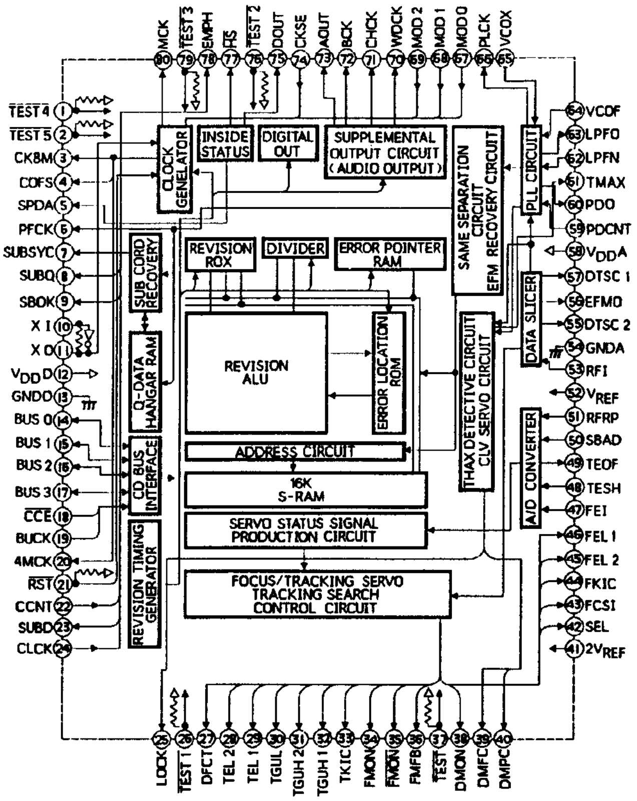
NJM4558M : IC007, 205, 804
NJM2903M : IC008
NJM2904M : IC009, 010



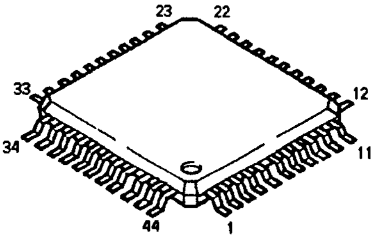

A-OUT 1
A-IN 2
A+IN 3
V- 4
8 V+
7 B-OUT
6 B-IN
5 B+IN
A
B

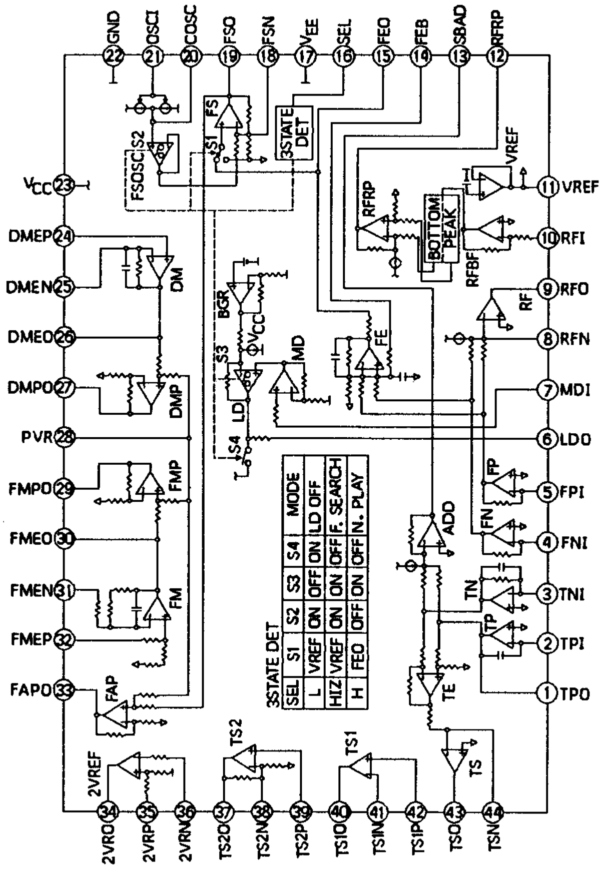
TC9236F : IC101


41
40
25
24
64
65
80
1


MCK 80
TEST3 79
EMPH 78
FS 77
TEST2 76
IDOUT 75
CKSE 74
AOUT 73
BCK 72
CHCK 71
WDCK 70
MOD2 69
MOD1 68
MOD0 67
PLCK 66
VCOX 65
TEST4 1
TEST5 2
CK8M 3
COFS 4
SPDA 5
PFCK 6
SUBSYC 7
SUBQ 8
SBOK 9
X I 10
X O 11
VDDD 12
GNDD 13
BUS 0 14
BUS 1 15
BUS 2 16
BUS 3 17
CCE 18
BUCK 19
4MCK 20
RST 21
CCNT 22
SUBD 23
CLCK 24
64 VCOF
63 LPFO
62 LPFN
61 TMAX
60 PDO
59 PDCNT
58 VDDA
57 DTSC 1
56 EFMO
55 DTSC 2
54 GNDA
53 RFI
52 VREF
51 RFRP
50 SBAD
49 TEOF
48 TESH
47 FEI
46 FEL 1
45 FEL 2
44 FKIC
43 FCSI
42 SEL
41 2VREF
LOCK 25
TEST1 26
DFCT 27
TEL 2 28
TEL 1 29
TGUL 30
TGUH 2 31
TGUH 1 32
TKIC 33
FMON 34
FMON 35
FMFB 36
TEST 37
DMON 38
DMFC 39
DMPC 40
CLOCK GENELATOR
INSIDE STATUS
DIGITAL OUT
SUPPLEMENTAL OUTPUT CIRCUIT (AUDIO OUTPUT)
SAME SEPARATION CIRCUIT EFM RECOVERY CIRCUIT
PLL CIRCUIT
SUB CORD RECOVERY
REVISION ROX
DIVIDER
ERROR POINTER RAM
Q-DATA HANGAR RAM
REVISION ALU
ERROR LOCATION ROM
THAX DETECTIVE CIRCUIT CLV SERVO CIRCUIT
DATA SLICER
CD BUS INTERFACE
ADDRESS CIRCUIT
16K S-RAM
A/D CONVERTER
SERVO STATUS SIGNAL PRODUCTION CIRCUIT
REVISION TIMING GENERATOR
FOCUS/TRACKING SERVO TRACKING SEARCH CONTROL CIRCUIT

TA8191F : IC102

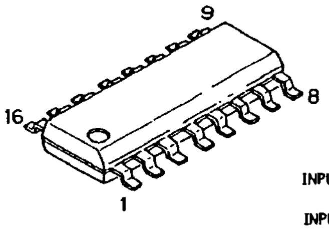

23
22
33
12
34
11
44
1

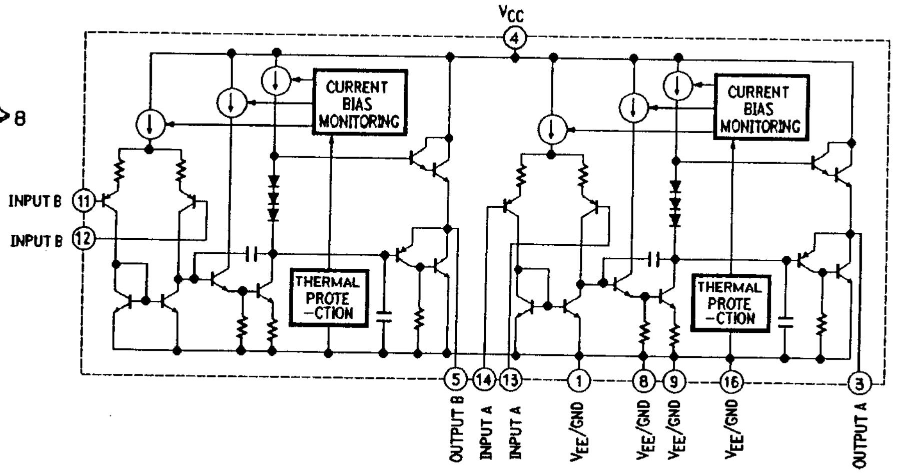

GND 22
OSCI 21
COSC 20
FSO 19
FSN 18
VEE 17
SEL 16
FEO 15
FEB 14
SBAD 13
RFRP 12
VCC 23
DMEP 24
DMEN 25
DMEO 26
DMPO 27
PVR 28
FMPO 29
FMEO 30
FMEN 31
FMEP 32
FAPO 33
11 VREF
10 RFI
9 RFO
8 RFN
7 MDI
6 LDO
5 FPI
4 FNI
3 TNI
2 TPI
1 TPO
2VRO 34
2VRP 35
2VRN 36
TS2O 37
TS2N 38
TS2P 39
TS1O 40
TS1N 41
TS1P 42
TSO 43
TSN 44
FSOSC
S2
S1
FS
3STATE DET
VREF
RFRP
BOTTOM PEAK
RFBF
RF
DM
BGR
VCC
S3
MD
FE
LD
S4
DMP
FMP
FM
FAP
ADD
FP
FN
TN
TP
TE
TS
2VREF
TS2
TS1

3STATE DET

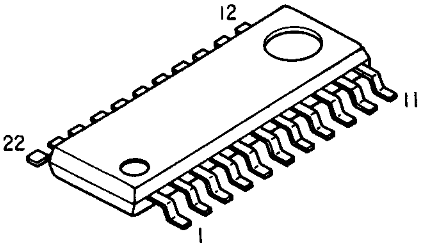
SEL	S1	S2	S3	S4	MODE
L	VREF	ON	OFF	ON	LD OFF
HIZ	VREF	ON	ON	OFF	F. SEARCH
H	FEO	OFF	ON	OFF	N. PLAY

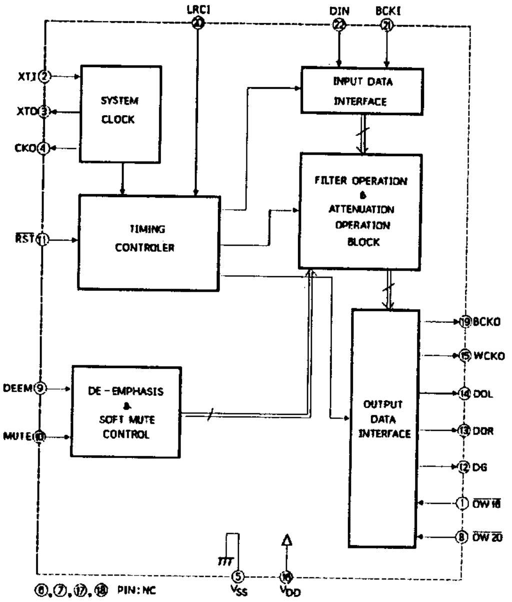
TCA0372M : IC103, 104, 105



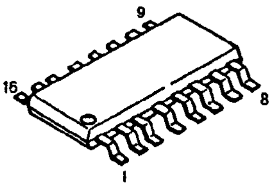

VCC
4
CURRENT BIAS MONITORING
CURRENT BIAS MONITORING
THERMAL PROTE -CTION
THERMAL PROTE -CTION
INPUT B 11
INPUT B 12
5 OUTPUT B
14 INPUT A
13 INPUT A
1 VEE/GND
8 VEE/GND
9 VEE/GND
16 VEE/GND
3 OUTPUT A

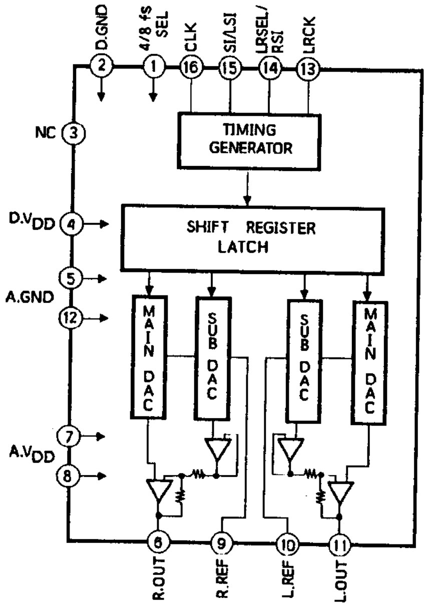
SM5840CS : IC106



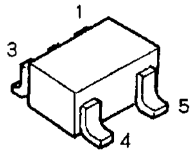

LRCI 20
DIN 22
BCKI 21
XTI 2
XTO 3
CKO 4
RST 11
DEEM 9
MUTE 10
SYSTEM CLOCK
TIMING CONTROLER
INPUT DATA INTERFACE
FILTER OPERATION & ATTENUATION OPERATION BLOCK
DE-EMPHASIS & SOFT MUTE CONTROL
OUTPUT DATA INTERFACE
19 BCKO
15 WCKO
14 DOL
13 DOR
12 DG
1 DW18
8 DW20
5 VSS
16 VDD
6, 7, 17, 18 PIN: NC

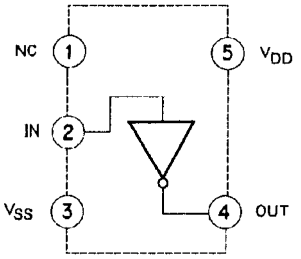
µPD6376 : IC107



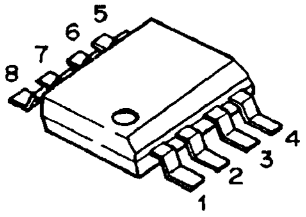

D.GND 2
4/8 fs SEL 1
CLK 16
SI/LSI 15
LRSEL/RSI 14
LRCK 13
NC 3
D.VDD 4
A.GND 5
12
A.VDD 7
8
TIMING GENERATOR
SHIFT REGISTER LATCH
MAIN DAC
SUB DAC
SUB DAC
MAIN DAC
6 R.OUT
9 R.REF
10 L.REF
11 L.OUT

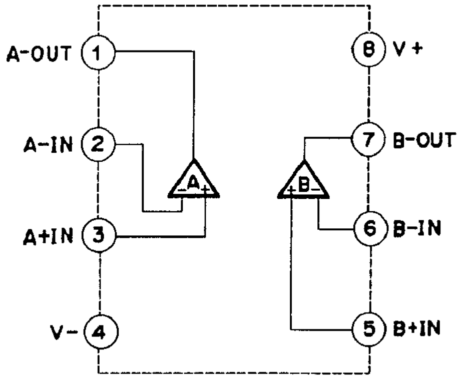
TC7SU04F : IC109



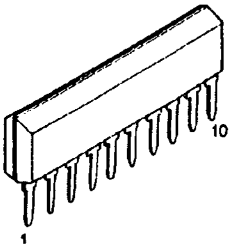

NC
1
5
V_{DD}
IN
2
V_{SS}
3
4
OUT

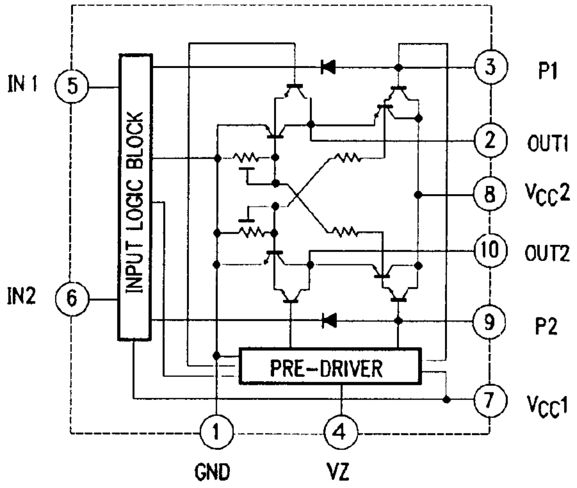
NJM4560E : IC204, 301
NJM4580E : IC251



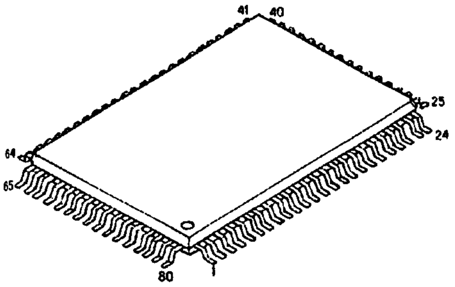

A-OUT 1
A-IN 2
A+IN 3
V- 4
8 V+
7 B-OUT
6 B-IN
5 B+IN
A
B

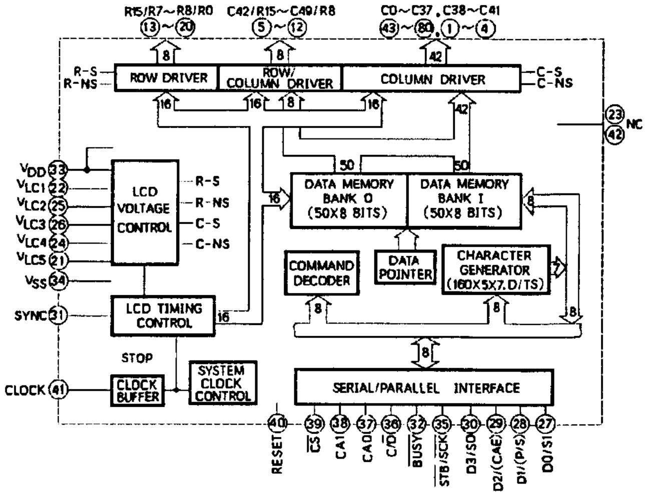
LB1641 : IC311



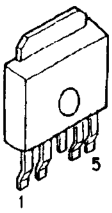

IN 1
5
IN2
6
INPUT LOGIC BLOCK
PRE-DRIVER
3
P1
2
OUT1
8
$V_{CC}2$
10
OUT2
9
P2
7
$V_{CC}1$
1
GND
4
VZ

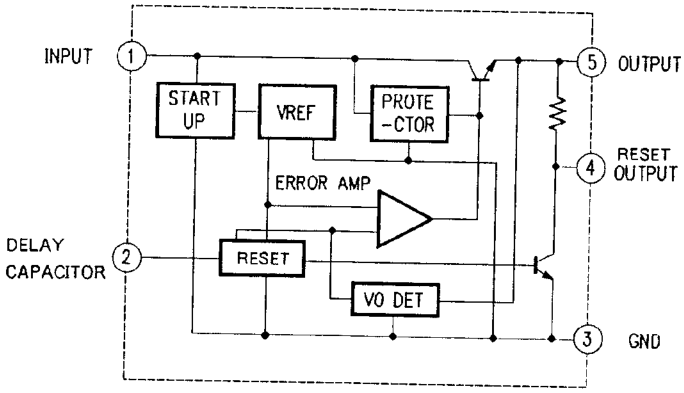
µPD7228AG : IC401


41
40
25
24
64
65
80
1

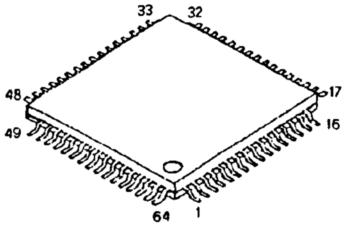

R15/R7~R8/R0
13~20
C42/R15~C49/R8
5~12
C0~C37, C38~C41
43~80, 1~4
8
8
42
R-S
R-NS
ROW DRIVER
ROW/
COLUMN DRIVER
COLUMN DRIVER
C-S
C-NS
16
16
8
16
42
23
42
NC
V_{DD} 33
V_{LC1} 22
V_{LC2} 25
V_{LC3} 26
V_{LC4} 24
V_{LC5} 21
V_{SS} 34
LCD VOLTAGE CONTROL
R-S
R-NS
C-S
C-NS
50
50
16
DATA MEMORY BANK 0 (50X8 BITS)
DATA MEMORY BANK I (50X8 BITS)
8
COMMAND DECODER
DATA POINTER
CHARACTER GENERATOR (160X5X7.D/TS)
7
SYNC 31
LCD TIMING CONTROL
16
8
8
8
STOP
8
CLOCK 41
CLOCK BUFFER
SYSTEM CLOCK CONTROL
SERIAL/PARALLEL INTERFACE
40
39
38
37
36
32
35
30
29
28
27
RESET
$\overline{CS}$
CA1
CA0
C/$\overline{D}$
$\overline{BUSY}$
$\overline{STB}$/SCK
D3/SO
D2/(CAE)
D1/(P/S)
D0/SI

L78LR05DFA : IC402



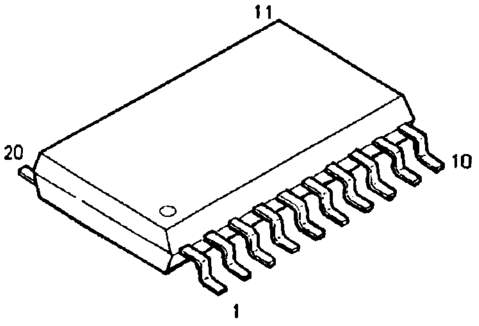

INPUT
①
START UP
VREF
PROTE -CTOR
⑤ OUTPUT
RESET OUTPUT
④
ERROR AMP
DELAY CAPACITOR
②
RESET
VO DET
③
GND

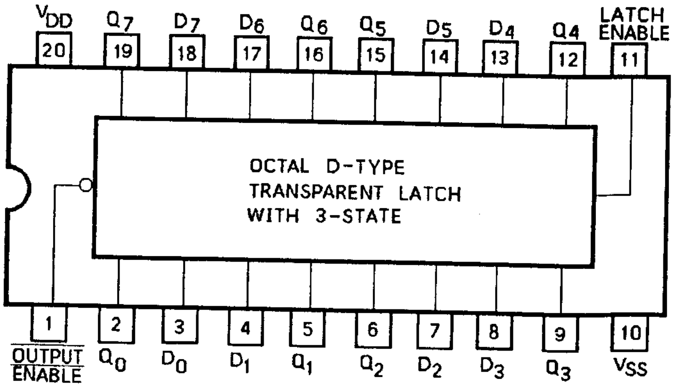
25699W23
25681W01 : IC501


33
32
48
17
49
16
64
1

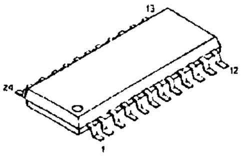
PIN NO.	CORD ADDRESS	I/O	PIN NO.	CORD ADDRESS	I/O	PIN NO.	CORD ADDRESS	I/O
1	$\overline{RD}$	O	23	AD 2	I/O	45	$\overline{SK}$	I
2	FM LEVEL	O	24	V_{SS}	—	46	$\overline{RDS}$	I
3	$\overline{\text{DTS MUTE}}$	O	25	AD 1	I/O	47	$\overline{DK}$	I
4	$\overline{\text{7071 RESET}}$	O	26	AD 0	I/O	48	$\overline{\text{SEARCH}}$	I
5	50K REF	O	27	A·STBY	O	49	S·METER	I
6	$\overline{\text{RESET}}$	I	28	DTS·STBY	I	50	NC	—
7	X2	O	29	RDS CLOCK	I	51	PLL CE	O
8	X1	I	30	RDS DATA START	I	52	PLL CLOCK	O
9	V_{SS}	—	31	RDS DATA	I	53	PLL DATA OUT	O
10	A15	O	32	PLL DATA IN	I	54	$\overline{\text{LPF SW}}$	O
11	A14	O	33	AUDIO IN	I	55	IF MUTE	O
12	NC	—	34	DTS START	I	56	NC	—
13	NC	—	35	DTS COMMAND	I	57	NC	—
14	NC	—	36	NC	—	58	LW	O
15	AD 10	O	37	NC	—	59	FM/$\overline{AM}$	O
16	AD 9	O	38	DTS CLOCK	I	60	L/$\overline{D}$	O
17	AD 8	O	39	DTS STATUS	O	61	MONO	O
18	AD 7	I/O	40	$\overline{EQ}$	—	62	DTS CE	I
19	AD 6	I/O	41	V_{DD}	—	63	SD	I
20	AD 5	I/O	42	A·V_{SS}	—	64	$\overline{WE}$	O
21	AD 4	I/O	43	A·V_{REF}	I			
22	AD 3	I/O	44	$\overline{ST}$	I			

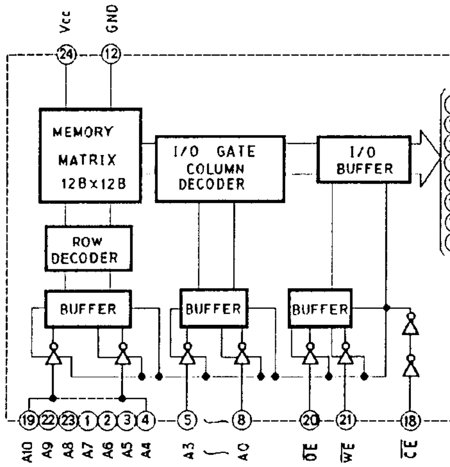
µPD74HC373 : IC502



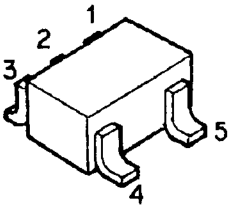

V_{DD}
Q_7
D_7
D_6
Q_6
Q_5
D_5
D_4
Q_4
LATCH ENABLE
20
19
18
17
16
15
14
13
12
11
OCTAL D-TYPE TRANSPARENT LATCH WITH 3-STATE
1
2
3
4
5
6
7
8
9
10
$\overline{\text{OUTPUT ENABLE}}$
Q_0
D_0
D_1
Q_1
Q_2
D_2
D_3
Q_3
V_{SS}

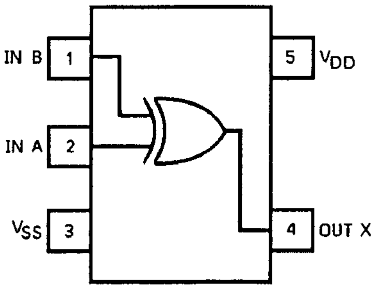
LC3516AML
CXK5816M } : IC503



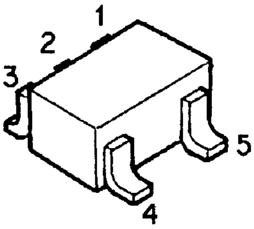

Vcc
GND
24
12
MEMORY MATRIX 128×128
I/O GATE COLUMN DECODER
I/O BUFFER
ROW DECODER
BUFFER
BUFFER
BUFFER
9 I/O1
10 I/O2
11 I/O3
13 I/O4
14 I/O5
15 I/O6
16 I/O7
17 I/O8
19 22 23 1 2 3 4
5 ~ 8
20
21
18
A10 A9 A8 A7 A6 A5 A4
A3 ~ A0
OE
WE
CE

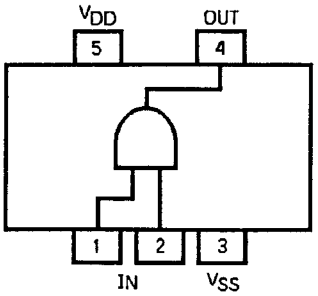
TC4S30F : IC504



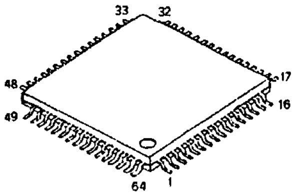

IN B 1
IN A 2
VSS 3
5 VDD
4 OUT X

TC4S81F : IC505



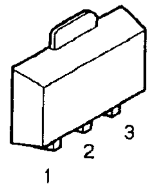

VDD
OUT
5
4
1
2
3
IN
VSS

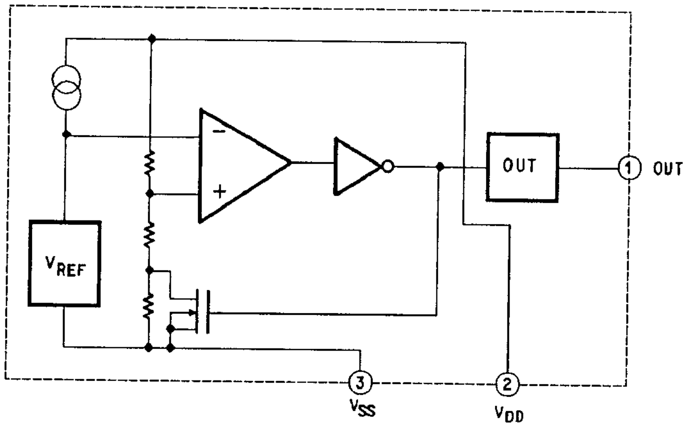
25699W17
25829W01 } : IC601


33
32
48
17
49
16
64
1

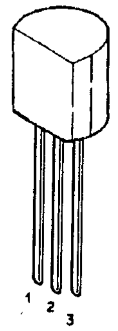
PIN NO.	CORD ADDRESS	I/O	PIN NO.	CORD ADDRESS	I/O	PIN NO.	CORD ADDRESS	I/O
1	DISC IN	I	23	NC	—	45	$\overline{\text{LIMIT}}$	I
2	LOAD POW	O	24	V_{SS}	—	46	$\overline{\text{POW}\cdot\text{SW}}$	I
3	LOAD FOR	O	25	OUT · REM	O	47	NC	—
4	LOAD REV	O	26	OUT · INT	O	48	AD 1	I
5	SOL	O	27	NC	—	49	AD 0	I
6	$\overline{\text{RESET}}$	I	28	HOLD	I	50	QRBM	O
7	X2	O	29	BAT · HOLD	I	51	DSP CLOCK	O
8	X1	I	30	ACC · HOLD	I	52	ALARM	O
9	V_{SS}	—	31	IN · PAUSE	I	53	$\overline{\text{DSP BUSY}}$	I
10	D-CE	O	32	IN · INT	I	54	NC	—
11	LOCK	I	33	$\overline{\text{CAMEND}}$	I	55	DSP SI	O
12	BUCK	O	34	$\overline{\text{D-MUTE}}$	I	56	DSP SCK	O
13	DA/CO	I/O	35	D-STATUS	I	57	DSP C/D	O
14	BUS 3	I/O	36	D-STBY	O	58	$\overline{\text{DSP CS}}$	O
15	BUS 2	I/O	37	D-START	O	59	$\overline{\text{BZ}}$ / SA	O
16	BUS 1	I/O	38	D-CLK	O	60	$\overline{\text{CD}}$ / TU	O
17	BUS 0	I/O	39	D-CMD	O	61	A · MUTE	O
18	V · CONT	O	40	$\overline{\text{EA}}$	I	62	D-LOAD	I
19	DISNMI	O	41	V_{DD}	—	63	RELOAD	I
20	F · CONT	O	42	A · V_{SS}	—	64	D-EJECT	I
21	DF RST	O	43	A · V_{REF}	I			
22	POWER ON	O	44	T · SENS	I			

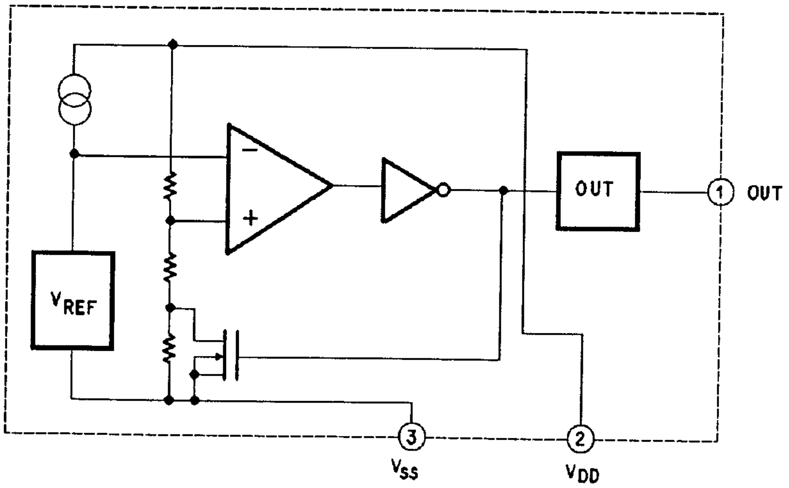
S-8052ALR : IC602



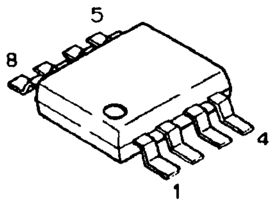

VREF
OUT
① OUT
③ VSS
② VDD

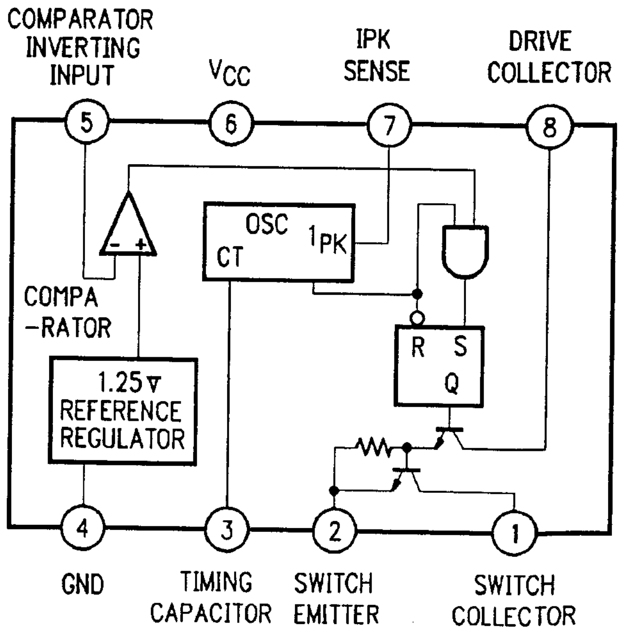
S-8054ALO : IC603



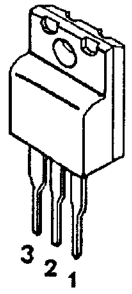

VREF
OUT
① OUT
③ VSS
② VDD

MC34063M : IC801

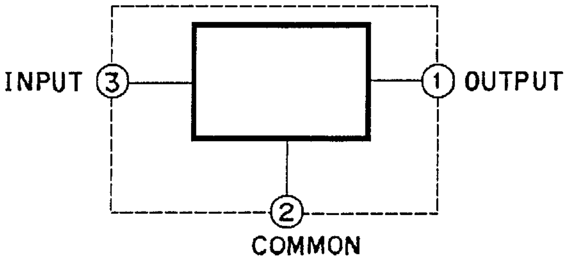



COMPARATOR INVERTING INPUT
VCC
IPK SENSE
DRIVE COLLECTOR
5
6
7
8
OSC
CT
IPK
COMPA-RATOR
1.25V REFERENCE REGULATOR
R S
Q
4
3
2
1
GND
TIMING CAPACITOR
SWITCH EMITTER
SWITCH COLLECTOR

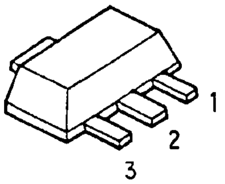
NJM7805FA : IC802



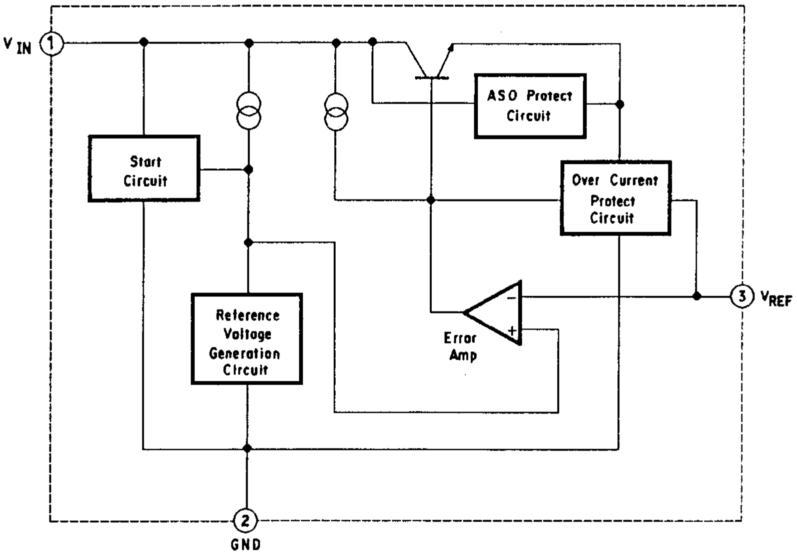
1 : OUTPUT
2 : COMMON
3 : INPUT


INPUT ③
① OUTPUT
②
COMMON

M5236ML : IC803



1 : V_{IN}
2 : GND
3 : V_{REF}


V IN ①
Start Circuit
ASO Protect Circuit
Over Current Protect Circuit
Reference Voltage Generation Circuit
Error Amp
③ V REF
②
GND

ALPINE ELECTRONICS INC.
Tokyo Office: 1-1-8 Nishi Gotanda,
Shinagawa-ku, Tokyo, Japan 141
Phone 03-3494-1101 Telex 8927-61

ALPINE ELECTRONICS OF AMERICA, INC.
19145 Gramercy Place
Torrance, California 90501
Phone 213-326-8000

ALPINE ELECTRONICS OF CANADA, INC.
605 Alden RD. Markam,
Ontario L3R 3L5 Canada
Phone 416-475-7280 Telex 06-986789

ALPINE ELECTRONICS GmbH
Brandenburger Str. 2-4,
4030 Ratingen F.R. Germany
Tel. 001-49-2102-4550 Telex 8589157
FAX. 001-49-2102-445321

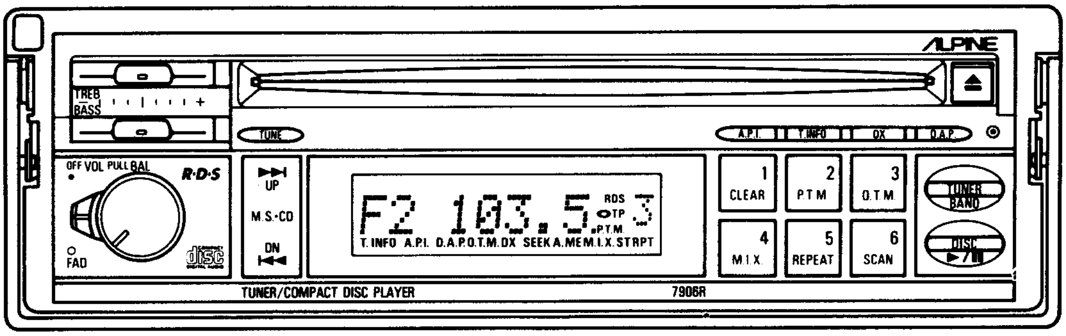
1[illegible] 91-S
68P31538W02
Printed in Japan

ALPINE SERVICE MANUAL

Digital FM/MW/LW/RDS Compact Disc Player

REVISED

- Serial Numbers between No. 10718001B and No. 10920500B, after No. 11021001M.
- This service manual contains only the differences from the Service Manual 7906R (68P31588W02).
- For the CD player mechanism parts (DP24A210) of this model, refer to the Service Manual • DP-S Series (68P13315W04).


ALPINE
TREB
BASS
TUNE
A.P.I.
T.INFO
DX
D.A.P.
OFF VOL PULL BAL
R·D·S
FAD
UP
M.S.·CD
DN
F2 103.5 3
RDS
TP
P.T.M.
T. INFO A.P.I. D.A.P. O.T.M. DX SEEK A.MEM M.I.X. STRPT
1 CLEAR
2 P.T.M
3 O.T.M.
4 M.I.X.
5 REPEAT
6 SCAN
TUNER BAND
DISC ►/❚❚
TUNER/COMPACT DISC PLAYER
7906R

7906R

Contents

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Schematic Diagram (2/5) .... 16 to 18
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Cabinet Assembly Parts List 37
Packing Assembly Parts List 38
Semi - Conductor Lead Identifications (Only difference) 39

Spare Schematic Diagram Inserted.

Specifications

<CD SECTION>

System	Optical (Compact Disc System)
Quantizing Bit Number	16 Bit Linear System
Channels	2 channels
Distortion (at 1kHz)	0.1%
Freguency Response (Ref. 1kHz)	0 ± 3dB (17Hz)
	0 ± 2dB (127Hz~10.007kHz)
	0 ± 4dB (19.997kHz)
S/N Ratio	80dB
Separation (at 1kHz)	60dB
De-Emphasis (Ref. 1kHz)	4kHz : -20 ± 2dB
	16kHz : -20 ± 2dB
Noise Level (at VOL. Min)	0.1mV
Currents (at Play)	1.2A
Tone Control Effect	Bass : ± 14 ± 3dB (100Hz)
	Treble : ± 13 ± 3dB (10kHz)

<FM SECTION>

Intermediate Frequency	10.7 ± 0.1MHz
Frequency Range	87.5~108MHz
Usable Sensitivity (Mono 30dB S/N, at 98.1MHz)	17.2dBf
Limiting Sensitivity (-10dB, at 98.1MHz)	18.2 ± 6dBf
S/N Ratio (Stereo at 98.1MHz)	48dB
Image Rejection (at 106.1MHz)	40dB
IF Rejection (at 90.1MHz)	60dB
Distortion (Input 1mV at 98.1MHz)	1%
Frequency Response (Ref. 400Hz, at 98.1MHz)	100Hz : 0 ± 3dB
	10kHz : -12 ± 3dB
Stereo Separation (Ref. 1kHz, at 98.1MHz)	25dB
SK Sensitivity (at 98.1MHz)	25.2dBf
PS Sensitivity (at 98.1NHz)	36.2dBf
TP Sensitivity (at 98.1MHz)	36.2dBf

<MW SECTION>

Intermediate Frequency	450kHz
Frequency Range	531~1,602kHz
Sensitivity (20dB S/N, at 999kHz)	34dB
S/N Ratio (at 999kHz)	44dB
Image Rejection (at 1,404kHz)	50dB
IF Rejection (at 603kHz)	60dB
Distortion (at 999kHz)	2%
Frequency Response (Ref. 400Hz, at 999kHz)	100Hz : -3 ± 4dB
	4kHz : -12 ± 6dB

<LW SECTION>

Intermediate Frequency	450kHz
Frequency Range	153~281kHz
Sensitivity (20dB S/N, at 216kHz)	41dB
S/N Ratio (at 216kHz)	40dB
Image Rejection (at 216kHz)	50dB
IF Rejection (at 216kHz)	50dB
Distortion (at 216kHz)	2%
Frequency Response (Ref. 400Hz, at 216kHz)	100Hz : -3 ± 4dB
	4kHz : -12 ± 6dB

<GENERAL>

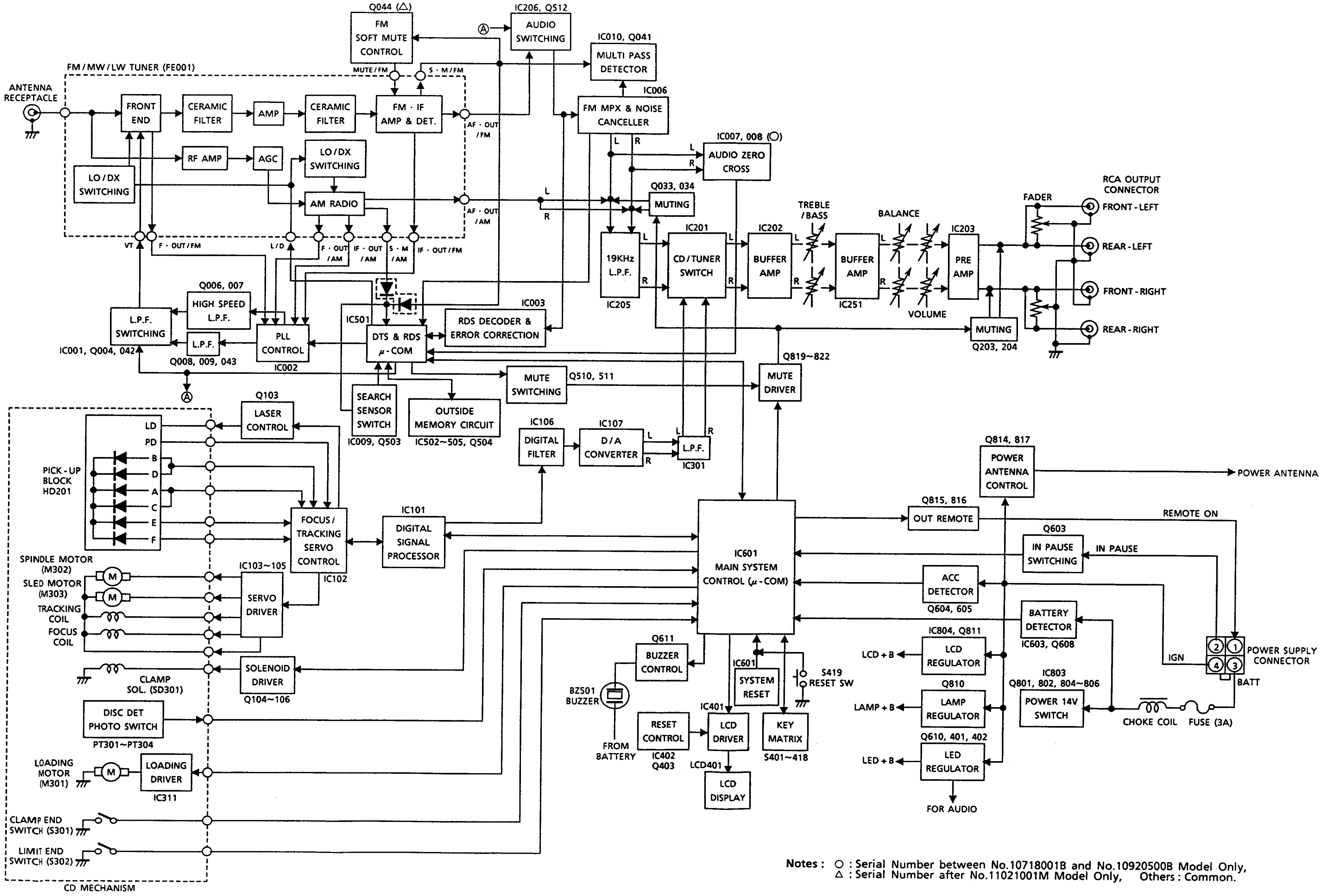
Power Supply	DC14V
Pre-Output Voltage/Impedance	1.2V/10kohm
Semiconductors	39 IC's, 91 Transistors, 25 Diodes, 14 Zener Diodes (○)
	37 IC's, 94 Transistors, 25 Diodes, 14 Zener Diodes (△)
Dimensions (W x H x D)	Chassis : 178 x 50 x 153mm
	Nose : 178 x 50 x 15mm
Weight	2.2kg

<COMPACT DISC>

Track Pich	1.6μm
Modulation Frequency	44.1kHz
Transfer Rate	4.3218Mbit/sec.
Dimensions	120/80 x 1.2mm

Notes : Due to Continuing product improvement, specifications and designs are subject to change without notice.
○ : Serial Number between No.10718001B and No.10920500B Model Only,
△ : Serial Number after No.11021001M Model Only, Others : Common.

Block Diagram


Q044 (△)
FM SOFT MUTE CONTROL
Ⓐ
IC206, Q512
AUDIO SWITCHING
IC010, Q041
MULTI PASS DETECTOR
FM / MW / LW TUNER (FE001)
MUTE / FM
S · M / FM
ANTENNA RECEPTACLE
FRONT END
CERAMIC FILTER
AMP
CERAMIC FILTER
FM · IF AMP & DET.
AF · OUT / FM
IC006
FM MPX & NOISE CANCELLER
L
R
RF AMP
AGC
LO / DX SWITCHING
LO / DX SWITCHING
IC007, 008 (○)
AUDIO ZERO CROSS
AM RADIO
AF · OUT / AM
Q033, 034
MUTING
RCA OUTPUT CONNECTOR
FADER
FRONT - LEFT
TREBLE / BASS
BALANCE
VT
F · OUT / FM
L / D
F · OUT / AM
IF · OUT / AM
S · M / AM
IF · OUT / FM
IC201
IC202
IC203
19KHz L.P.F.
CD / TUNER SWITCH
BUFFER AMP
BUFFER AMP
PRE AMP
REAR - LEFT
FRONT - RIGHT
IC205
IC251
VOLUME
Q006, 007
HIGH SPEED L.P.F.
L.P.F. SWITCHING
IC001, Q004, 042
L.P.F.
Q008, 009, 043
PLL CONTROL
IC002
IC501
DTS & RDS μ - COM
IC003
RDS DECODER & ERROR CORRECTION
MUTING
Q203, 204
REAR - RIGHT
Q819~822
MUTE DRIVER
MUTE SWITCHING
Q510, 511
Ⓐ
Q103
LASER CONTROL
SEARCH SENSOR SWITCH
IC009, Q503
OUTSIDE MEMORY CIRCUIT
IC502~505, Q504
IC106
DIGITAL FILTER
IC107
D / A CONVERTER
L.P.F.
IC301
LD
PD
B
D
A
C
E
F
PICK - UP BLOCK HD201
FOCUS / TRACKING SERVO CONTROL
IC102
IC101
DIGITAL SIGNAL PROCESSOR
Q814, 817
POWER ANTENNA CONTROL
POWER ANTENNA
Q815, 816
OUT REMOTE
REMOTE ON
Q603
IN PAUSE SWITCHING
IN PAUSE
IC601 MAIN SYSTEM CONTROL (μ - COM)
SPINDLE MOTOR (M302)
SLED MOTOR (M303)
TRACKING COIL
FOCUS COIL
IC103~105
SERVO DRIVER
ACC DETECTOR
Q604, 605
BATTERY DETECTOR
IC603, Q608
IC804, Q811
LCD REGULATOR
LCD + B
IGN
POWER SUPPLY CONNECTOR
BATT
CLAMP SOL. (SD301)
SOLENOID DRIVER
Q104~106
Q611
BUZZER CONTROL
IC601
SYSTEM RESET
S419 RESET SW
Q810
LAMP REGULATOR
LAMP + B
IC803
Q801, 802, 804~806
POWER 14V SWITCH
CHOKE COIL
FUSE (3A)
BZ501 BUZZER
FROM BATTERY
IC401
RESET CONTROL
IC402 Q403
LCD DRIVER
KEY MATRIX
S401~418
Q610, 401, 402
LED REGULATOR
LED + B
FOR AUDIO
DISC DET PHOTO SWITCH
PT301~PT304
LOADING MOTOR (M301)
M
LOADING DRIVER
IC311
LCD401
LCD DISPLAY
CLAMP END SWITCH (S301)
LIMIT END SWITCH (S302)
CD MECHANISM

Notes : ○ : Serial Number between No.10718001B and No.10920500B Model Only,
△ : Serial Number after No.11021001M Model Only, Others : Common.

Parts Layout on P.C. Boards and Wiring Diagram (1/2)

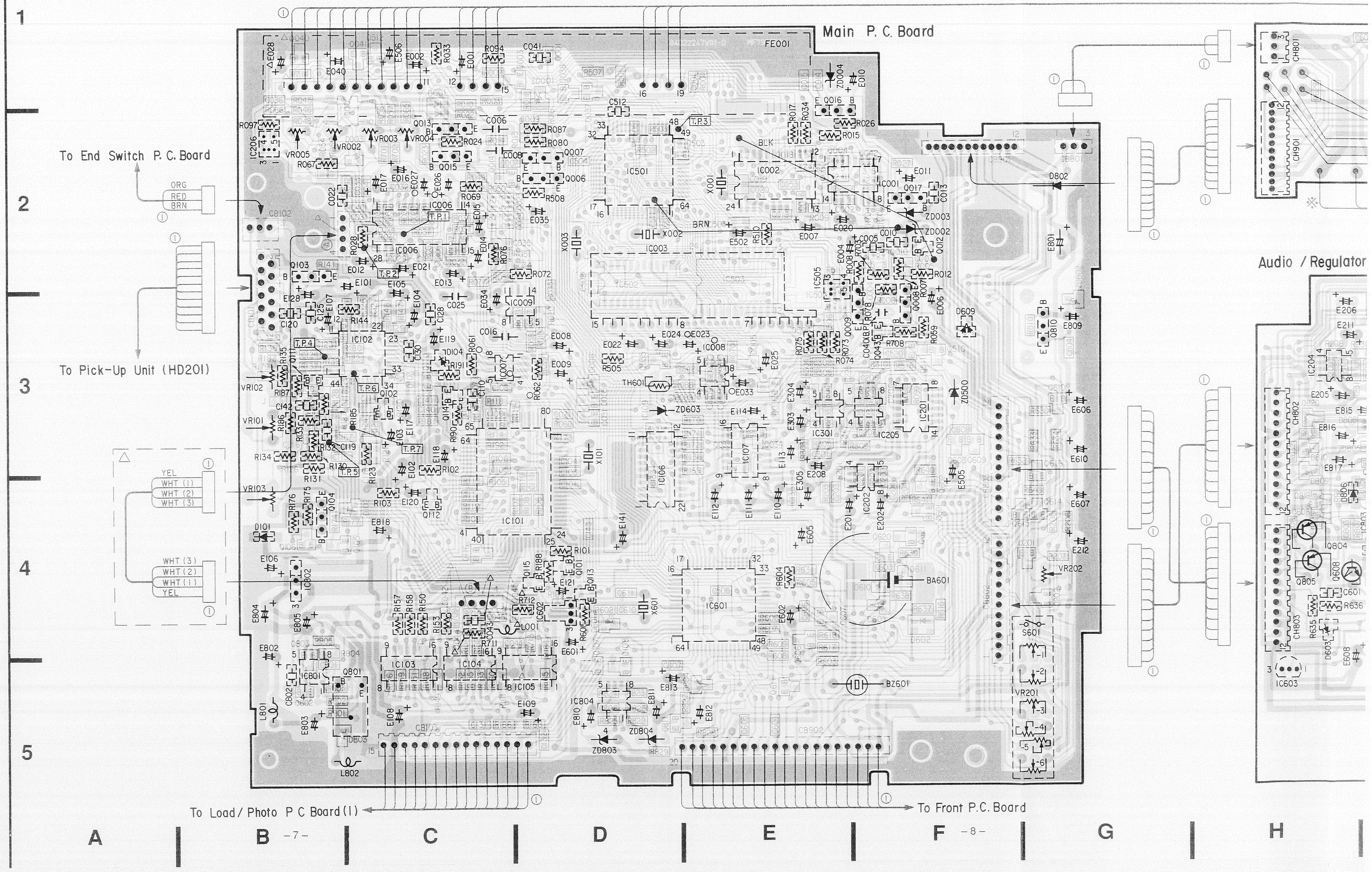
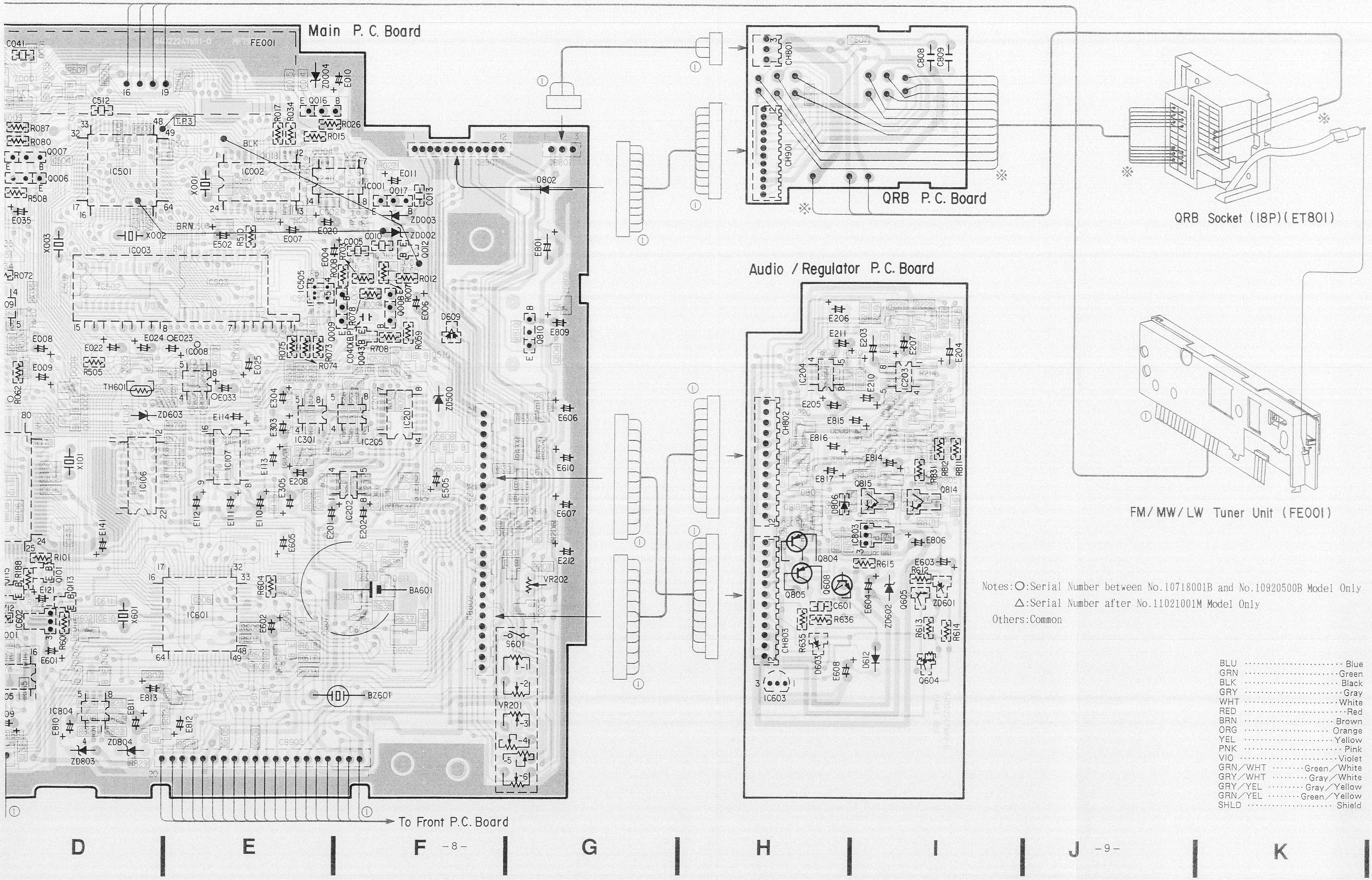

Main P. C. Board
To End Switch P. C. Board
ORG
RED
BRN
To Pick-Up Unit (HD201)
YEL
WHT (1)
WHT (2)
WHT (3)
WHT (3)
WHT (2)
WHT (1)
YEL
BLK
BRN
To Load/ Photo P C Board (1)
To Front P.C. Board
Audio / Regulator
CH801
CH901
CH802
CH803
IC501
IC002
IC001
IC003
IC101
IC102
IC601
IC103
IC104
IC105
IC801
IC804
IC603
CB102
CB101
CB103
CB902
CB601
CB801
BA601
BZ601
S601
VR201
VR202
1
2
3
4
5
A
B
C
D
E
F
G
H

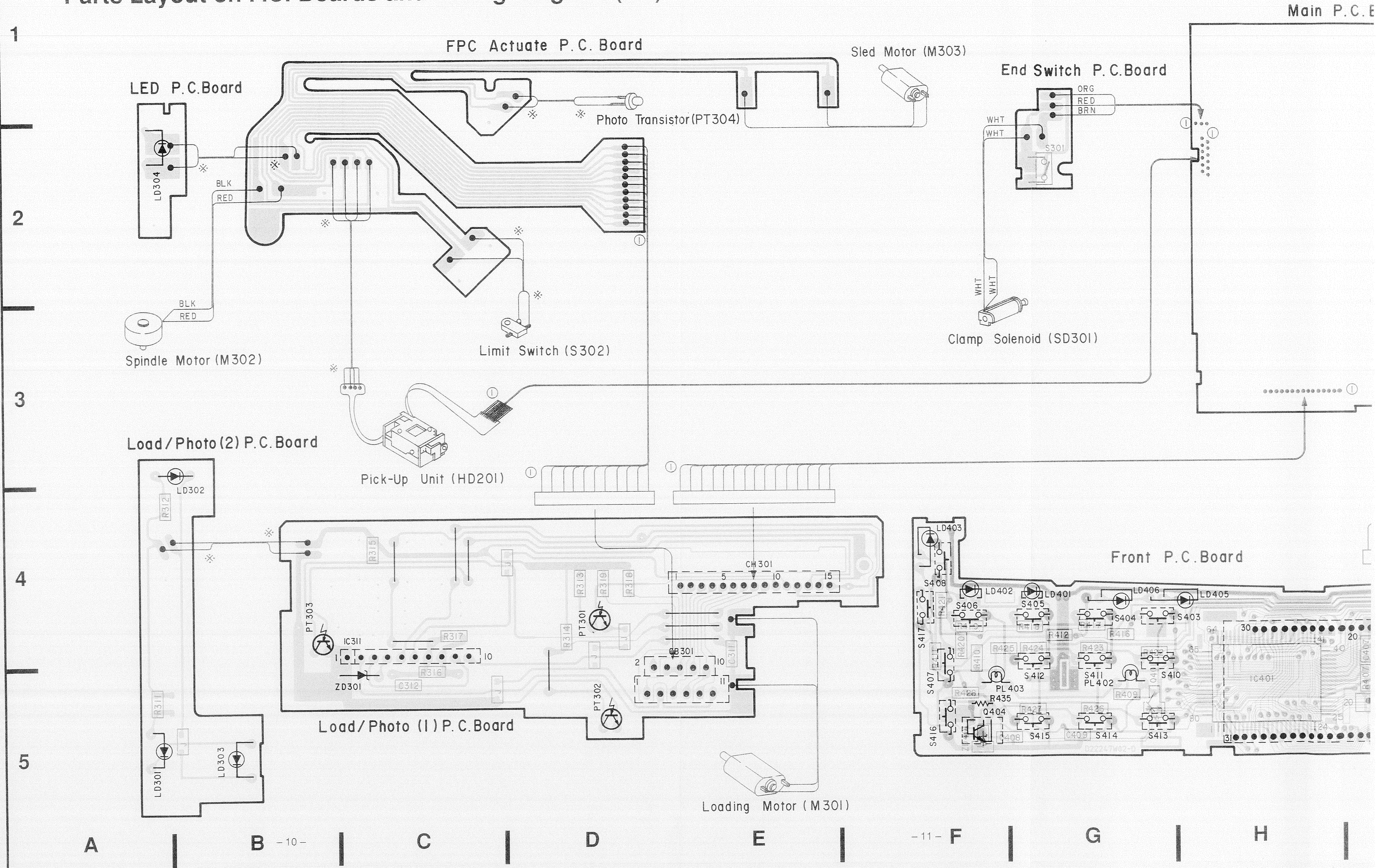
Diagram (1/2)


Main P.C. Board
FE001
QRB P.C. Board
CH801
CH901
QRB Socket (18P)(ET801)
Audio / Regulator P.C. Board
CH802
CH803
FM/MW/LW Tuner Unit (FE001)
IC501
IC002
IC003
IC502
IC503
IC106
IC107
IC205
IC201
IC202
IC301
IC601
IC804
IC204
IC203
IC603
BA601
BZ601
VR201
VR202
S601
BLK
BRN
To Front P.C. Board
D
E
F
G
H
I
J
K

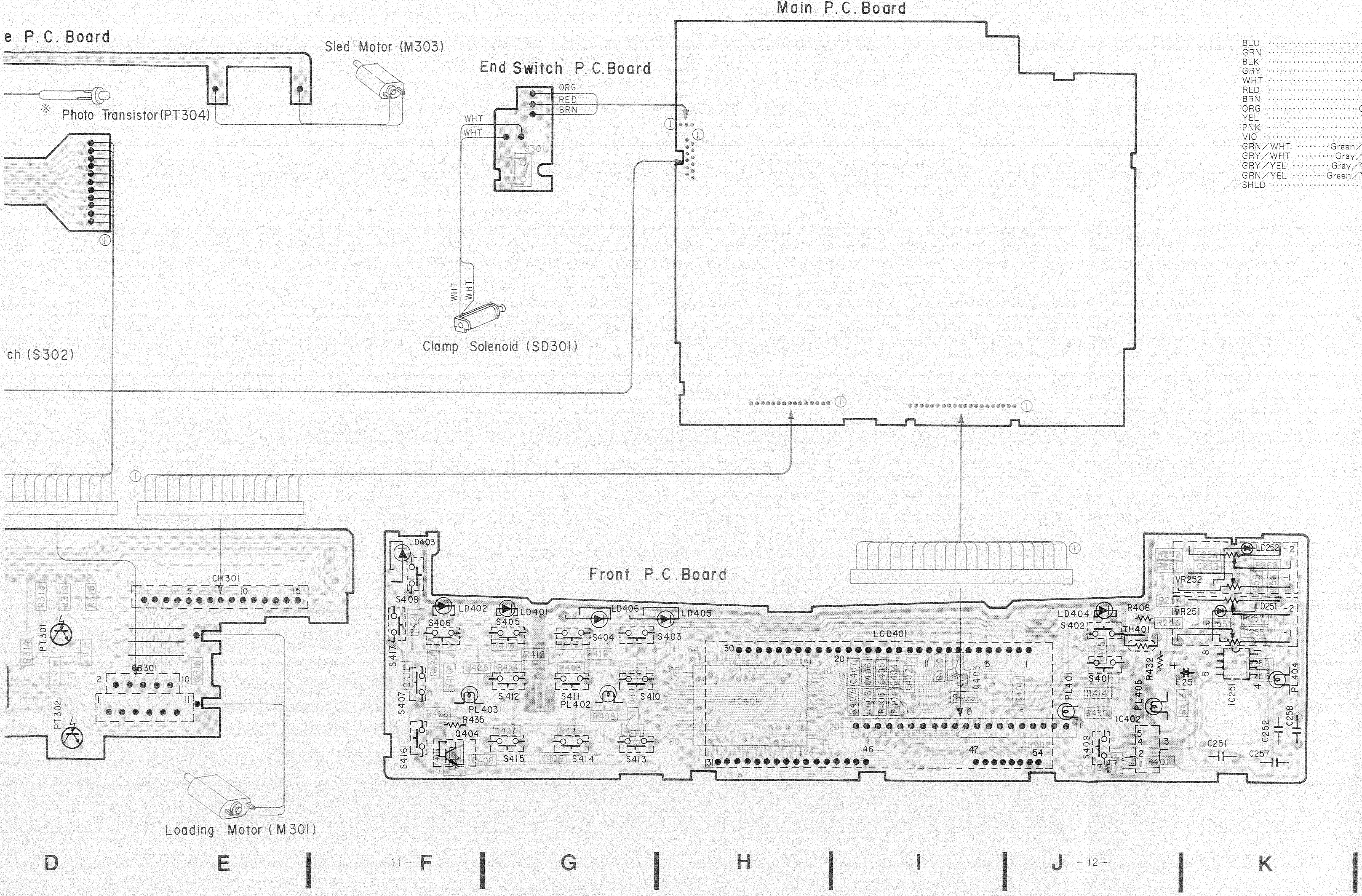
Notes:○:Serial Number between No.10718001B and No.10920500B Model Only
△:Serial Number after No.11021001M Model Only
Others:Common

BLU	Blue
GRN	Green
BLK	Black
GRY	Gray
WHT	White
RED	Red
BRN	Brown
ORG	Orange
YEL	Yellow
PNK	Pink
VIO	Violet
GRN/WHT	Green/White
GRY/WHT	Gray/White
GRY/YEL	Gray/Yellow
GRN/YEL	Green/Yellow
SHLD	Shield

Parts Layout on P.C. Boards and Wiring Diagram (2/2)


FPC Actuate P.C. Board
LED P.C.Board
LD304
BLK
RED
Sled Motor (M303)
Photo Transistor (PT304)
End Switch P.C.Board
ORG
RED
BRN
WHT
WHT
S301
Main P.C.B
Spindle Motor (M302)
BLK
RED
Limit Switch (S302)
WHT
WHT
Clamp Solenoid (SD301)
Pick-Up Unit (HD201)
Load/Photo (2) P.C.Board
LD302
R312
R311
LD301
LD303
Load/Photo (1) P.C.Board
R315
R313
R319
R318
CH301
5
10
15
PT303
IC311
1
10
R317
R316
ZD301
C312
R314
PT301
CB301
2
10
11
C311
PT302
Loading Motor (M301)
Front P.C.Board
LD403
S408
LD402
LD401
LD406
LD405
S406
S405
S404
S403
S417
R412
R416
R420
R425
R424
R423
S412
S411
PL402
S410
S407
PL403
R435
R409
IC401
Q404
R427
R426
S416
S415
S414
S413
30
20
64
65
80
31
1
2
3
4
5
A
B
C
D
E
F
G
H

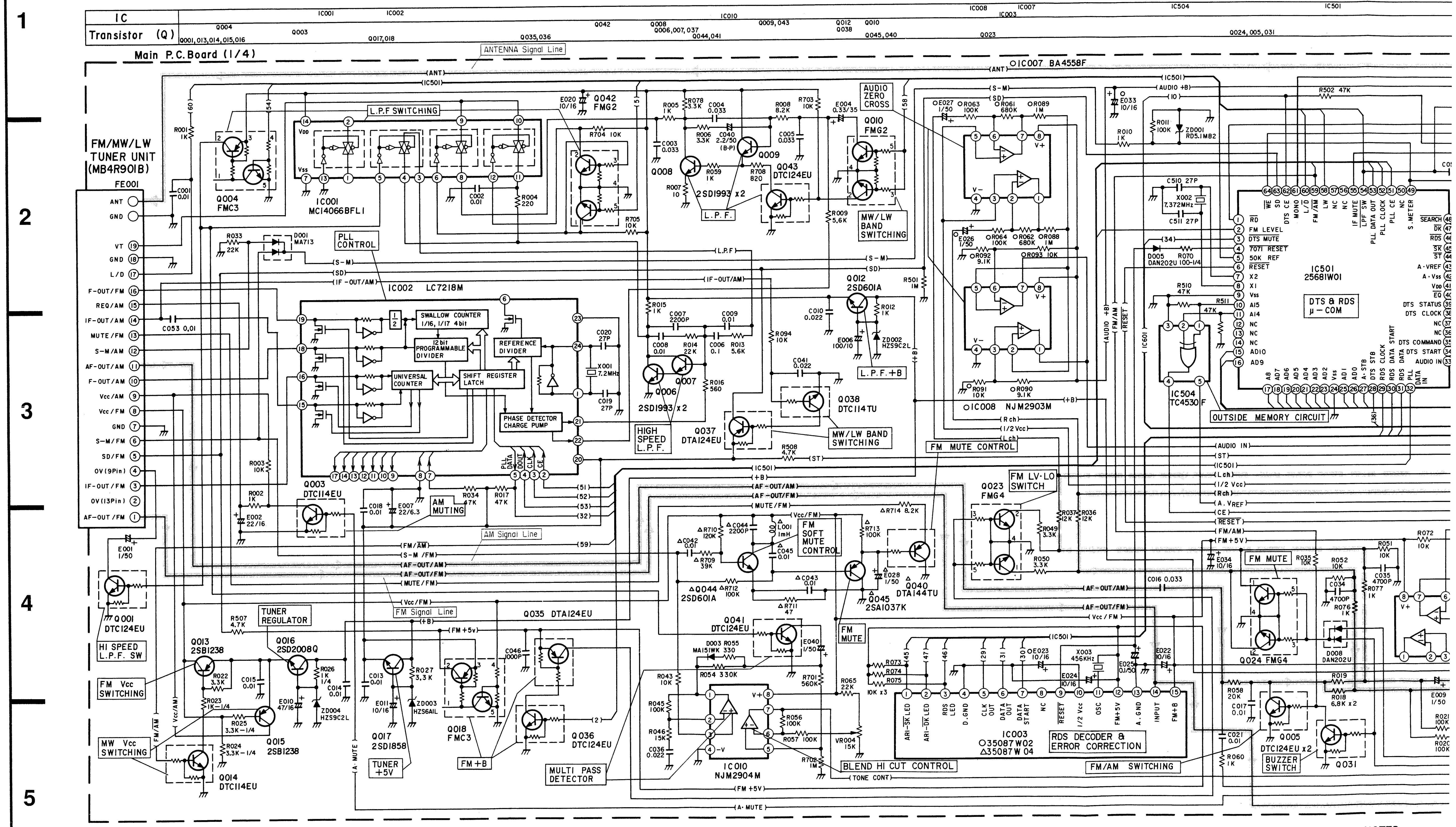
agram (2/2)


e P.C. Board
Sled Motor (M303)
Photo Transistor (PT304)
※
End Switch P.C.Board
ORG
RED
BRN
WHT
WHT
S301
Main P.C. Board
WHT
WHT
Clamp Solenoid (SD301)
ch (S302)
CH301
CB301
PT301
PT302
Loading Motor (M301)
Front P.C. Board
LD403
LD402
LD401
LD406
LD405
LD404
S408
S406
S405
S404
S403
S402
S417
S407
S416
S412
S411
S410
S415
S414
S413
S409
S401
PL403
PL402
PL401
PL404
PL405
Q404
Q403
Q402
R435
R408
TH401
R432
LCD401
IC401
IC402
IC251
CH902
VR252
VR251
LD252-2
LD251-2
E251
C251
C252
C257
C258
D
E
F
G
H
I
J
K

BLU	Blue
GRN	Green
BLK	Black
GRY	Gray
WHT	White
RED	Red
BRN	Brown
ORG	Orange
YEL	Yellow
PNK	Pink
VIO	Violet
GRN/WHT	Green/White
GRY/WHT	Gray/White
GRY/YEL	Gray/Yellow
GRN/YEL	Green/Yellow
SHLD	Shield

Schematic Diagram (1/5)

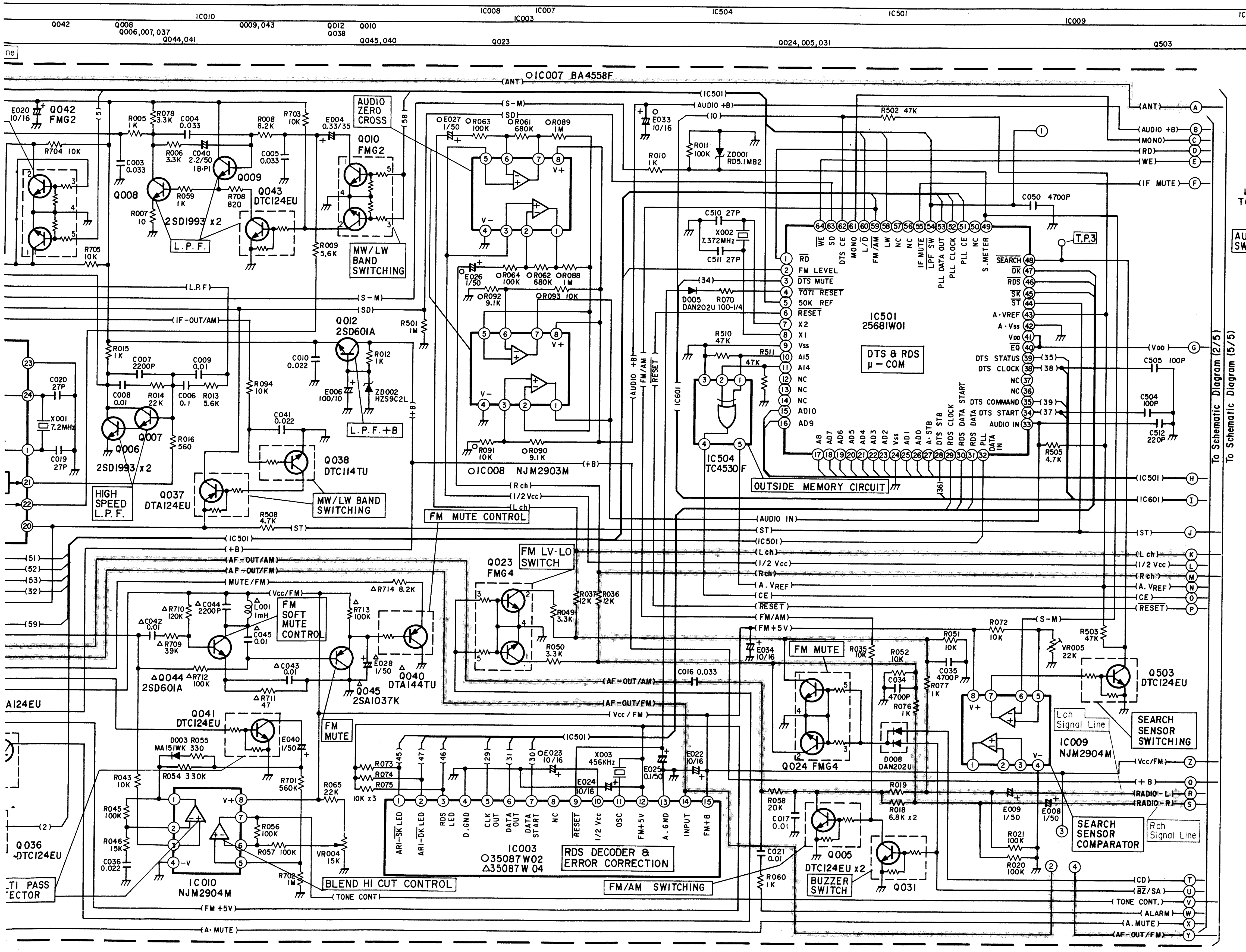
- For Schematic Diagram (5/5) of this Service Manual refer to the Service Manual 7906R (68P31588W02).

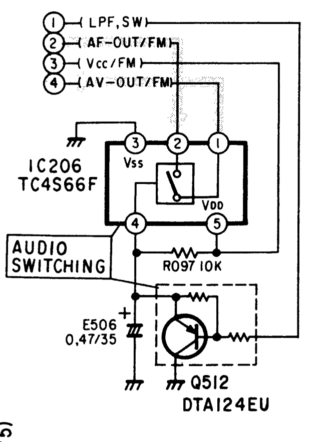


1
2
3
4
5
IC
Transistor (Q)
Main P.C.Board (1/4)
ANTENNA Signal Line
FM/MW/LW TUNER UNIT (MB4R901B)
FE001
L.P.F SWITCHING
IC001 MC14066BFL1
Q004 FMC3
Q042 FMG2
Q008
2SD1993 x2
Q009
Q043 DTC124EU
L.P.F.
AUDIO ZERO CROSS
Q010 FMG2
MW/LW BAND SWITCHING
IC007 BA4558F
PLL CONTROL
IC002 LC7218M
SWALLOW COUNTER 1/16, 1/17 4bit
12 bit PROGRAMMABLE DIVIDER
REFERENCE DIVIDER
UNIVERSAL COUNTER
SHIFT REGISTER LATCH
PHASE DETECTOR CHARGE PUMP
X001 7.2MHz
Q006
Q007
2SD1993 x2
HIGH SPEED L.P.F.
Q037 DTA124EU
Q012 2SD601A
L.P.F.+B
Q038 DTC114TU
MW/LW BAND SWITCHING
IC008 NJM2903M
FM MUTE CONTROL
IC501 2568IW01
DTS & RDS μ-COM
X002 7.372MHz
IC504 TC4530F
OUTSIDE MEMORY CIRCUIT
Q003 DTC114EU
AM MUTING
AM Signal Line
FM Signal Line
FM SOFT MUTE CONTROL
Q044 2SD601A
Q040 DTA144TU
Q045 2SA1037K
FM LV·LO SWITCH
Q023 FMG4
FM MUTE
Q024 FMG4
Q001 DTC124EU
HI SPEED L.P.F. SW
FM Vcc SWITCHING
MW Vcc SWITCHING
Q013 2SB1238
TUNER REGULATOR
Q016 2SD2008Q
Q015 2SB1238
Q014 DTC114EU
Q017 2SD1858
TUNER +5V
Q018 FMC3
FM+B
Q035 DTA124EU
Q036 DTC124EU
MULTI PASS DETECTOR
Q041 DTC124EU
IC010 NJM2904M
BLEND HI CUT CONTROL
X003 456KHz
IC003 ○35087W02 △35087W04
RDS DECODER & ERROR CORRECTION
FM/AM SWITCHING
Q005 DTC124EU x2
BUZZER SWITCH
Q031
D008 DAN202U
A
B
C
D
E
F
G
H

NOTES:
1. All resistance valu
2. All capacitance v

5) of this Service Manual
7906R (68P31588W02).


IC010
Q042
Q008
Q006,007,037
Q044,041
Q009,043
Q012
Q038
Q010
Q045,040
IC008
IC007
IC003
Q023
IC504
Q024,005,031
IC501
IC009
IC206
Q512
Q503
OIC007 BA4558F
E020 10/16
Q042 FMG2
R704 10K
R005 1K
R078 3.3K
C004 0.033
R006 3.3K
C040 2.2/50 (B·P)
R008 8.2K
R703 10K
E004 0.33/35
AUDIO ZERO CROSS
C003 0.033
Q008
R059 1K
R708 820
Q009
Q043 DTC124EU
C005 0.033
R007 10
2SD1993 x2
L.P.F.
R705 10K
R009 5.6K
Q010 FMG2
MW/LW BAND SWITCHING
OE027 1/50
OR063 100K
OR061 680K
OR089 1M
E026 1/50
OR064 100K
OR062 680K
OR088 1M
OR092 9.1K
OR093 10K
OR091 10K
OR090 9.1K
OIC008 NJM2903M
R015 1K
C007 2200P
C009 0.01
C020 27P
C008 0.01
R014 22K
C006 0.1
R013 5.6K
X001 7.2MHz
C019 27P
Q006
Q007
2SD1993 x2
R016 560
HIGH SPEED L.P.F.
Q037 DTA124EU
R094 10K
C041 0.022
Q038 DTC114TU
MW/LW BAND SWITCHING
R508 4.7K
Q012 2SD601A
R012 1K
C010 0.022
E006 100/10
ZD002 HZS9C2L
L.P.F.+B
R501 1M
FM MUTE CONTROL
FM LV·LO SWITCH
Q023 FMG4
R037 12K
R036 12K
R049 3.3K
R050 3.3K
R714 8.2K
R713 100K
C044 2200P
L001 1mH
FM SOFT MUTE CONTROL
R710 120K
C042 0.01
R709 39K
C045 0.01
C043 0.01
Q044 2SD601A
R712 100K
E028 1/50
Q040 DTA144TU
Q045 2SA1037K
R711 47
Q041 DTC124EU
FM MUTE
D003 MA151WK
R055 330
R054 330K
E040 1/50
R701 560K
R043 10K
R045 100K
R046 15K
C036 0.022
Q036 DTC124EU
R056 100K
R057 100K
VR004 15K
R702 1M
IC010 NJM2904M
BLEND HI CUT CONTROL
R065 22K
R073 R074 R075 10K x3
X003 456KHz
OE023 10/16
E024 10/16
E025 0.1/50
E022 10/16
IC003 O35087W02 △35087W04
RDS DECODER & ERROR CORRECTION
FM/AM SWITCHING
ARI-SK LED
ARI-DK LED
RDS LED
D.GND
CLK OUT
DATA OUT
DATA START
NC
RESET
1/2 Vcc
OSC
FM+5V
A.GND
INPUT
FM+B
E033 10/16
R010 1K
R011 100K
ZD001 RD5.1MB2
C510 27P
X002 7.372MHz
C511 27P
D005 DAN202U
R070 100-1/4
R510 47K
R511 47K
IC504 TC4530F
OUTSIDE MEMORY CIRCUIT
IC501 2568IW01
DTS & RDS μ-COM
R502 47K
C050 4700P
T.P.3
RD
FM LEVEL
DTS MUTE
7071 RESET
50K REF
RESET
X2
X1
Vss
AI5
AI4
NC
AD10
AD9
WE
SD
DTS CE
MONO
L/D
FM/AM
LW
NC
IF MUTE
LPF SW
PLL DATA OUT
PLL CLOCK
PLL CE
S.METER
SEARCH
DK
RDS
SK
ST
A·VREF
A·Vss
VDD
EQ
DTS STATUS
DTS CLOCK
DTS COMMAND
DTS START
AUDIO IN
A8
AD7
AD6
AD5
AD4
AD3
AD2
AD1
AD0
A·STB
RDS CLOCK
RDS DATA START
RDS DATA
PLL DATA IN
C505 100P
C504 100P
C512 220P
R505 4.7K
FM MUTE
R035 10K
C016 0.033
E034 10/16
R052 10K
C034 4700P
R076 1K
D008 DAN202U
Q024 FMG4
R051 10K
R072 10K
C035 4700P
R077 1K
VR005 22K
R503 47K
Q503 DTC124EU
SEARCH SENSOR SWITCHING
Lch Signal Line
IC009 NJM2904M
SEARCH SENSOR COMPARATOR
Rch Signal Line
R058 20K
C017 0.01
R019
R018 6.8K x2
E009 1/50
E008 1/50
R021 100K
R020 100K
C021 0.01
R060 1K
Q005
DTC124EU x2
BUZZER SWITCH
Q031
(ANT) (S-M) (SD) (AUDIO +B) (IO) (IC501) (MONO) (RD) (WE) (IF MUTE) (VDD) (L.P.F) (IF-OUT/AM) (+B) (Rch) (1/2 Vcc) (Lch) (ST) (AUDIO IN) (IC601) (AF-OUT/AM) (AF-OUT/FM) (MUTE/FM) (Vcc/FM) (A.VREF) (CE) (RESET) (FM/AM) (FM+5V) (RADIO-L) (RADIO-R) (CD) (BZ/SA) (TONE CONT.) (ALARM) (A.MUTE) (TONE CONT)
To Schematic Diagram (2/5)
To Schematic Diagram (5/5)
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
ine
AI24EU
TI PASS
ECTOR


LPF,SW
AF-OUT/FM
Vcc/FM
AV-OUT/FM
IC206 TC4S66F
Vss
VDD
AUDIO SWITCHING
R097 10K
E506 0.47/35
Q512 DTA124EU

IC001

1	0V
2	0V
3	0.6V
4	0.6V
5	9V
6	6.2V
7	0V
8	3.3V
9	3.3V
10	3.3V
11	0.6V
12	0V
13	0V
14	9V

OIC007

1	PULSE
2	0V
3	4.4V
4	0V
5	4.4V
6	4.4V
7	PULSE
8	8.4V

OIC008

1	PULSE
2	PULSE
3	0V
4	0V
5	PULSE
6	4V
7	PULSE
8	8.4V

IC009

1	0V
2	0V
3	0V
4	0V
5	3.6V
6	4.6V
7	0V
8	8.9V

IC002

1	1.7V	13	0V
2	0V	14	0V
3	0V	15	0V
4	0V	16	0V
5	4.6V	17	0V
6	0V	18	0V
7	4.6V	19	2.1V
8	0V	20	4.9V
9	0V	21	1.1V
10	0V	22	PULSE
11	0V	23	0V
12	0V	24	2.5V

IC010

1	5.6V
2	5.6V
3	5.5V
4	0V
5	1.5V
6	2.4V
7	4.5V
8	8.9V

IC003

1	4.7V
2	4.7V
3	4.7V
4	0V
5	4.7V
6	4.7V
7	4.7V
8	0V
9	3.8V
10	4.4V
11	PULSE
12	4.7V
13	0V
14	PULSE
15	9V

	1	2	3	4	5
Q004	0V	9V	9V	5V	0V
Q010	0V	6.3V	0V	0V	0V
Q018	0V	4.7V	4.9V	9V	0V
Q023	0.7V	0.7V	0V	0V	
Q024	0.7V	0.7V	0V	0V	
Q042	6.2V	0V	6.2V	0V	0V

IC206

1	PULSE
2	PULSE
3	0V
4	0V
5	8.5V

IC504

1	0V
2	5V
3	0V
4	0.9V
5	5V

	E	C	B
Q001	0V	0V	9V
Q003	0V	0V	4.9V
Q005	0V	0V	3.5V
Q006	0V	0.6V	0.6V
Q007	0.6V	0.6V	1.1V
Q008	0V	3.3V	0.5V
Q009	0.5V	9V	1.1V
Q012	9V	14.2V	9.6V
Q013	9V	9V	8.2V
Q014	0V	0V	4.9V
Q015	9V	0V	8.9V
Q016	9.6V	14.2V	9V
Q017	4.7V	14.2V	5.4V
Q031	0V	3.5V	0V
Q035	4.7V	0V	4.5V
Q036	0V	4.5V	0V
Q037	4.9V	4.7V	4.7V
Q038	0V	4.7V	0V
△Q040	6.6V	0V	6.1V
Q041	0V	0V	9V
Q043	0V	0V	6.3V
△Q044	1.4V	8.5V	2V
△Q045	6.1V	0V	5.1V
Q503	0V	4.8V	0V
Q512	0V	0V	0V

IC501

1	5V	17	0V	33	0V	49	PULSE
2	0V	18	PULSE	34	PULSE	50	0V
3	5V	19	PULSE	35	PULSE	51	0V
4	5V	20	PULSE	36	0V	52	0V
5	0V	21	PULSE	37	5V	53	0V
6	5V	22	PULSE	38	PULSE	54	0V
7	PULSE	23	0V	39	0V	55	0V
8	1.9V	24	0V	40	5V	56	0V
9	0V	25	0V	41	5V	57	0V
10	0V	26	0V	42	0V	58	0V
11	5V	27	0V	43	5V	59	4.9V
12	PULSE	28	0V	44	4.8V	60	0V
13	PULSE	29	4.6V	45	4.6V	61	0V
14	PULSE	30	4.6V	46	4.6V	62	5V
15	PULSE	31	4.6V	47	4.6V	63	0V
16	PULSE	32	4.6V	48	0V	64	5V

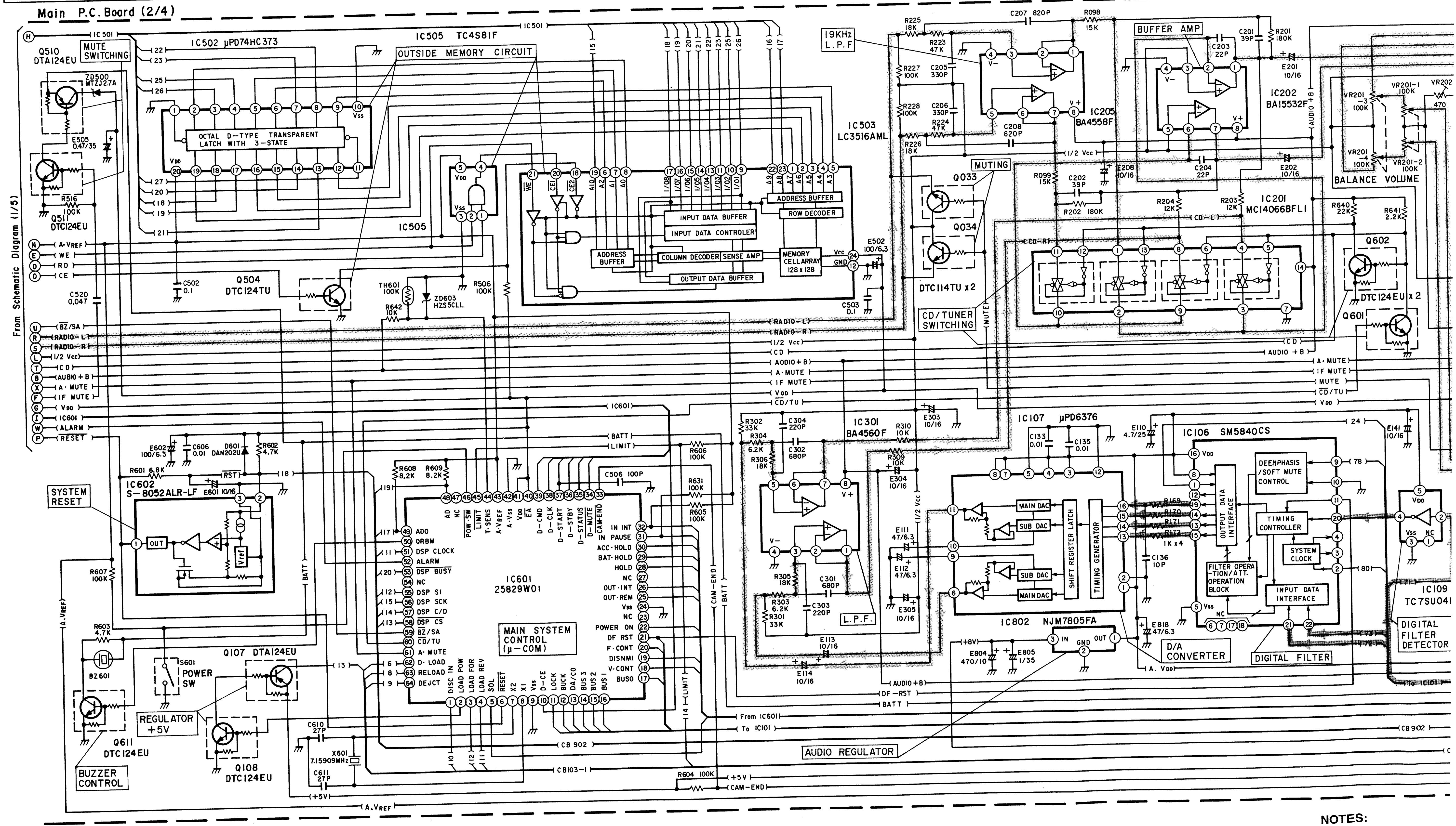
[Measuring Conditions]
- Power Supply Voltage : DC14V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions :
  CD : Be playing back the 2nd Music of the test CD (YEDS-18)
  TUNER : No signal input
  FM : 98.1MHz
  MW : 999kHz
  LW : 216kHz

NOTES:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$

Schematic Diagram (2/5)

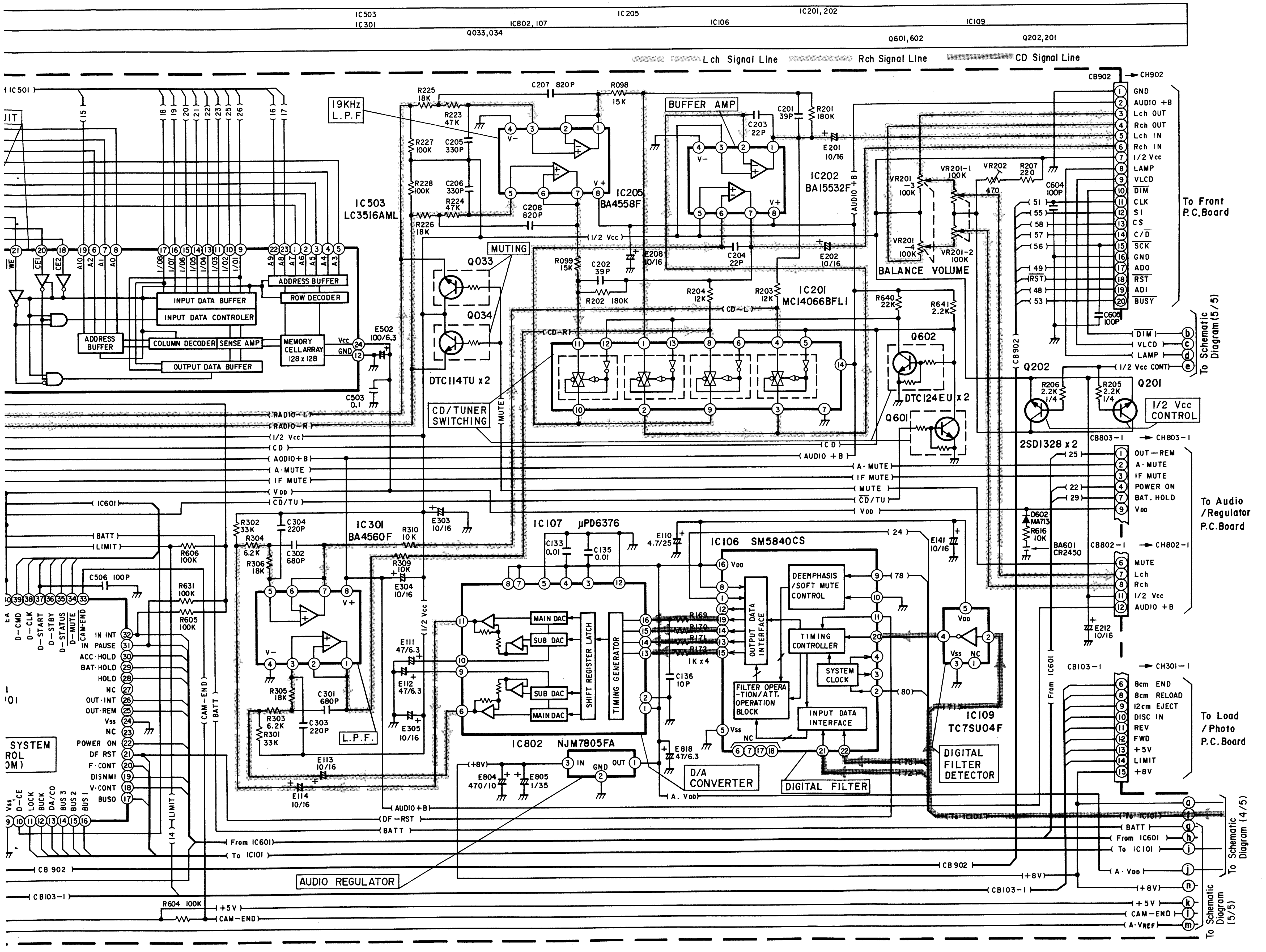
IC	IC602	IC502	IC505	IC601	IC503 IC301	IC802, 107	IC205	IC106	IC201, 202	IC109
Transistor (Q)	Q510, 511 Q611, 107, 108	Q504			Q033, 034				Q601, 602	

Lch Signal Line Rch Signal Line



Main P.C. Board (2/4)
From Schematic Diagram (1/5)
MUTE SWITCHING
Q510 DTA124EU
ZD500 MTZJ2.7A
E505 0.47/35
R516 100K
Q511 DTC124EU
IC502 μPD74HC373
OCTAL D-TYPE TRANSPARENT LATCH WITH 3-STATE
IC505 TC4S81F
OUTSIDE MEMORY CIRCUIT
IC505
C502 0.1
C520 0.047
Q504 DTC124TU
TH601 100K
R642 10K
ZD603 HZS5CLL
R506 100K
IC503 LC3516AML
ADDRESS BUFFER
INPUT DATA BUFFER
INPUT DATA CONTROLER
ROW DECODER
COLUMN DECODER
SENSE AMP
MEMORY CELLARRAY 128 x 128
OUTPUT DATA BUFFER
E502 100/6.3
C503 0.1
A·VREF
WE
RD
CE
BZ/SA
RADIO-L
RADIO-R
1/2 Vcc
CD
AUDIO+B
A·MUTE
IF MUTE
VDD
IC601
ALARM
RESET
CD/TU
BATT
LIMIT
E602 100/6.3
C606 0.01
D601 DAN202U
R602 4.7K
R601 6.8K
RST
E601 10/16
IC602 S-8052ALR-LF
SYSTEM RESET
R607 100K
R603 4.7K
BZ601
Q611 DTC124EU
BUZZER CONTROL
S601 POWER SW
Q107 DTA124EU
REGULATOR +5V
Q108 DTC124EU
C610 27P
X601 7.15909MHz
C611 27P
+5V
A.VREF
R608 8.2K
R609 8.2K
IC601 25829W01
MAIN SYSTEM CONTROL (μ-COM)
ADO
QRBM
DSP CLOCK
ALARM
DSP BUSY
NC
DSP SI
DSP SCK
DSP C/D
DSP CS
BZ/SA
CD/TU
A·MUTE
D·LOAD
RELOAD
DEJCT
DISC IN
LOAD POW
LOAD FOR
LOAD REV
SOL
RESET
X2
X1
Vss
D-CE
LOCK
BUCK
DA/CO
BUS 3
BUS 2
BUS 1
BUSO
V·CONT
DISNMI
F·CONT
DF RST
POWER ON
IN INT
IN PAUSE
ACC·HOLD
BAT·HOLD
HOLD
OUT·INT
OUT·REM
POW-SW
T-SENS
A-VREF
A-Vss
EA
D-CMD
D-CLK
D-START
D-STBY
D-STATUS
D-MUTE
CAM-END
C506 100P
R606 100K
R631 100K
R605 100K
CB 902
CB103-1
R604 100K
CAM-END
From IC601
To IC101
AUDIO REGULATOR
19KHz L.P.F
R225 18K
R223 47K
R227 100K
C205 330P
R228 100K
C206 330P
R224 47K
R226 18K
C207 820P
R098 15K
C208 820P
IC205 BA4558F
MUTING
Q033
Q034
DTC114TU x2
R099 15K
C202 39P
R202 180K
E208 10/16
CD/TUNER SWITCHING
MUTE
BUFFER AMP
C203 22P
C201 39P
R201 180K
E201 10/16
IC202 BA15532F
C204 22P
E202 10/16
R204 12K
R203 12K
IC201 MC14066BFL1
VR201-1 100K
VR201-3 100K
VR201-4 100K
VR201-2 100K
VR202 470
BALANCE VOLUME
R640 22K
R641 2.2K
Q602
DTC124EU x 2
Q601
IC301 BA4560F
R302 33K
C304 220P
R304 6.2K
R306 18K
C302 680P
R310 10K
R309 10K
E304 10/16
R305 18K
C301 680P
R303 6.2K
R301 33K
C303 220P
L.P.F.
E111 47/6.3
E112 47/6.3
E305 10/16
E113 10/16
E114 10/16
E303 10/16
IC107 μPD6376
C133 0.01
C135 0.01
MAIN DAC
SUB DAC
SHIFT REGISTER LATCH
TIMING GENERATOR
IC802 NJM7805FA
IN GND OUT
E804 470/10
E805 1/35
E818 4.7/6.3
C136 10P
D/A CONVERTER
E110 4.7/25
IC106 SM5840CS
R169 R170 R171 R172 1K x4
OUTPUT DATA INTERFACE
DEEMPHASIS /SOFT MUTE CONTROL
TIMING CONTROLLER
SYSTEM CLOCK
FILTER OPERATION/ATT. OPERATION BLOCK
INPUT DATA INTERFACE
DIGITAL FILTER
E141 10/16
IC109 TC7SU04
DIGITAL FILTER DETECTOR
DF-RST
To IC101

NOTES:
1. All resistance values ar


IC503
IC301
IC802, 107
Q033, 034
IC205
IC106
IC201, 202
Q601, 602
IC109
Q202, 201
Lch Signal Line
Rch Signal Line
CD Signal Line
IC501
19KHz L.P.F
BUFFER AMP
IC503 LC3516AML
IC205 BA4558F
IC202 BA15532F
IC201 MC14066BFL1
MUTING
Q033
Q034
DTC114TU x2
CD/TUNER SWITCHING
BALANCE VOLUME
VR201-1 100K
VR201-2 100K
VR201-3 100K
VR201-4 100K
VR202
Q602
DTC124EU x2
Q601
Q202
Q201
2SD1328 x2
1/2 Vcc CONTROL
CB902
CH902
GND
AUDIO +B
Lch OUT
Rch OUT
Lch IN
Rch IN
1/2 Vcc
LAMP
VLCD
DIM
CLK
SI
CS
C/D
SCK
GND
ADO
RST
ADI
BUSY
To Front P.C.Board
To Schematic Diagram (5/5)
CB803-1
CH803-1
OUT-REM
A·MUTE
IF MUTE
POWER ON
BAT. HOLD
VDD
To Audio /Regulator P.C.Board
CB802-1
CH802-1
MUTE
Lch
Rch
1/2 Vcc
AUDIO +B
CB103-1
CH301-1
8cm END
8cm RELOAD
12cm EJECT
DISC IN
REV
FWD
+5V
LIMIT
+8V
To Load /Photo P.C.Board
To Schematic Diagram (4/5)
INPUT DATA BUFFER
INPUT DATA CONTROLER
ADDRESS BUFFER
ROW DECODER
COLUMN DECODER
SENSE AMP
MEMORY CELLARRAY 128 x 128
OUTPUT DATA BUFFER
IC301 BA4560F
L.P.F.
IC107 μPD6376
MAIN DAC
SUB DAC
SHIFT REGISTER LATCH
TIMING GENERATOR
IC106 SM5840CS
DEEMPHASIS /SOFT MUTE CONTROL
OUTPUT DATA INTERFACE
TIMING CONTROLLER
SYSTEM CLOCK
FILTER OPERA-TION/ATT. OPERATION BLOCK
INPUT DATA INTERFACE
IC109 TC7SU04F
DIGITAL FILTER DETECTOR
DIGITAL FILTER
D/A CONVERTER
IC802 NJM7805FA
AUDIO REGULATOR
SYSTEM ROL OM)
IN INT
IN PAUSE
ACC·HOLD
BAT·HOLD
HOLD
NC
OUT·INT
OUT·REM
Vss
NC
POWER ON
DF RST
F·CONT
DISNMI
V·CONT
BUSO
D-CMD
D-CLK
D-START
D-STBY
D-STATUS
D-MUTE
CAM-END
From IC601
To IC101
CB 902
CB103-1
R604 100K
+5V
CAM-END
BATT
LIMIT
RADIO-L
RADIO-R
CD
AUDIO+B
A·MUTE
IF MUTE
VDD
CD/TU
DF-RST
A.VDD
+8V
A·VREF

IC502			
1	0V	11	PULSE
2	PULSE	12	PULSE
3	PULSE	13	PULSE
4	PULSE	14	PULSE
5	PULSE	15	PULSE
6	PULSE	16	PULSE
7	PULSE	17	PULSE
8	PULSE	18	PULSE
9	PULSE	19	PULSE
10	0V	20	4.9V

IC503

1	PULSE	13	PULSE
2	PULSE	14	PULSE
3	PULSE	15	PULSE
4	PULSE	16	PULSE
5	PULSE	17	PULSE
6	PULSE	18	PULSE
7	PULSE	19	PULSE
8	PULSE	20	4.9V
9	PULSE	21	0V
10	PULSE	22	PULSE
11	PULSE	23	PULSE
12	0V	24	4.9V

IC601

1	4.1V	17	PULSE	33	0V	49	4.9V
2	4.8V	18	4.8V	34	0V	50	0V
3	0V	19	0V	35	PULSE	51	PULSE
4	0V	20	0V	36	0V	52	0V
5	0V	21	4.9V	37	PULSE	53	PULSE
6	4.8V	22	4.8V	38	0V	54	0V
7	PULSE	23	PULSE	39	0V	55	PULSE
8	1.8V	24	0V	40	4.9V	56	PULSE
9	0V	25	4.8V	41	4.9V	57	PULSE
10	4.9V	26	0V	42	4.9V	58	PULSE
11	4.9V	27	0V	43	0V	59	0V
12	PULSE	28	0.3V	44	5V	60	0V
13	PULSE	29	4.8V	45	5V	61	4.8V
14	PULSE	30	4.8V	46	4.5V	62	4.1V
15	PULSE	31	4.5V	47	0V	63	0V
16	PULSE	32	4.5V	48	0V	64	0V

IC505

1	4.9V
2	0V
3	4.9V
4	4.9V
5	5V

IC602

1	4.8V
2	4.8V
3	0V

IC802

1	8.7V
2	0V
3	5.1V

IC106

1	0V	12	PULSE
2	2V	13	PULSE
3	3.1V	14	PULSE
4	PULSE	15	PULSE
5	0V	16	4.9V
6	0V	17	0V
7	0V	18	0V
8	4.9V	19	PULSE
9	0V	20	PULSE
10	0V	21	PULSE
11	4.9V	22	PULSE

IC107

1	4.9V
2	0V
3	4.9V
4	4.9V
5	0V
6	1.5V
7	4.9V
8	4.9V
9	2V
10	2V
11	1.5V
12	0V
13	PULSE
14	PULSE
15	PULSE
16	PULSE

IC201

1	4.3V
2	4.4V
3	4.4V
4	4.4V
5	5.9V
6	5.9V
7	0V
8	4.4V
9	4.4V
10	4.4V
11	4.4V
12	0V
13	0V
14	8.4V

IC301

1	4.2V
2	4.2V
3	4V
4	0V
5	PULSE
6	PULSE
7	4.2V
8	8.2V

IC109

1	PULSE
2	0V
3	PULSE
4	4.9V
5	0V

IC202

1	PULSE
2	4.2V
3	4.2V
4	0V
5	4.2V
6	4.2V
7	PULSE
8	8.2V

IC205

1	4.4V
2	4.4V
3	3.8V
4	0V
5	3.8V
6	4.4V
7	4.4V
8	8.4V

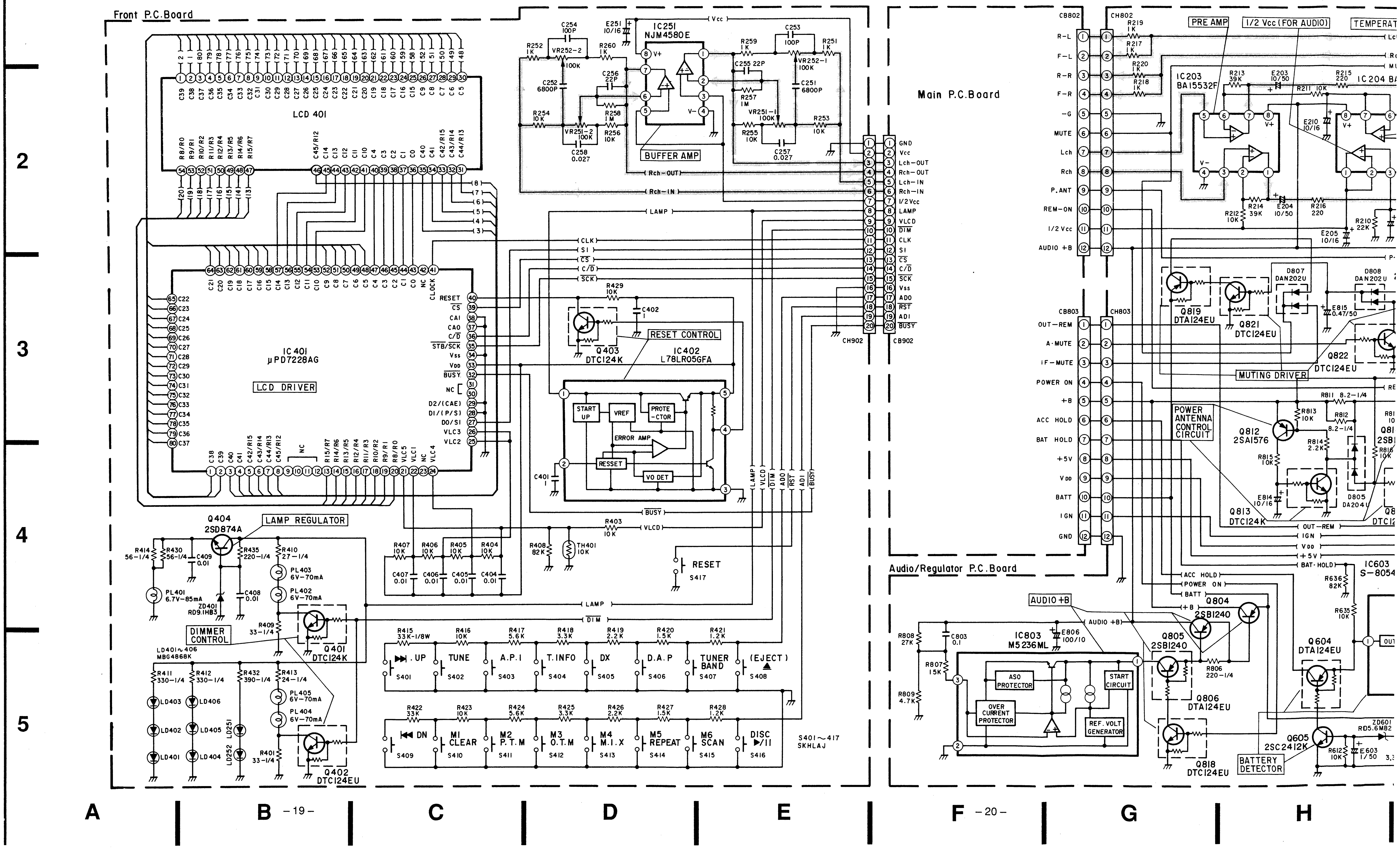
	E	C	B
Q033	4V	4.4V	0V
Q034	4.4V	4V	0V
Q107	5.1V	4.7V	0V
Q108	0V	0V	4.9V
Q201	4.2V	4.2V	4.9V
Q202	4.2V	4.2V	4.9V
Q504	0V	4.5V	0.9V
Q510	14V	14V	0V
Q511	0V	0V	5V
Q601	0V	5.9V	0V
Q602	0V	0V	5.9V
Q611	0V	14.5V	0V

[Measuring Conditions]
- Power Supply Voltage : DC14V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions :
  CD : Be playing back the 2nd Music of the test CD (YEDS-18)
  TUNER : No signal input
  FM : 98.1MHz
  MW : 999kHz
  LW : 216kHz

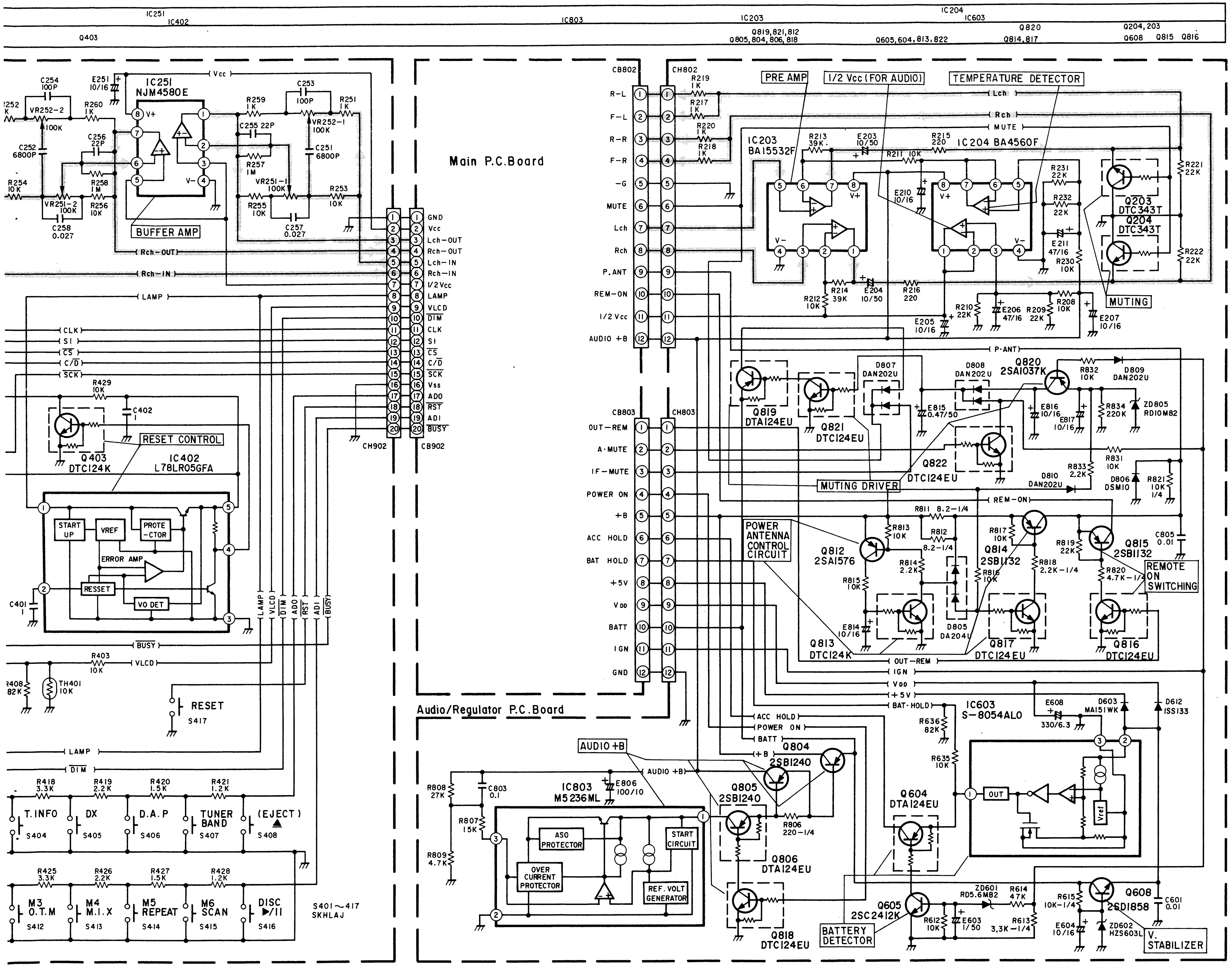
NOTES:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$

Schematic Diagram (3/5)

I C	IC401	IC251 IC402	IC803	IC203	IC204 IC603
Transistor (Q)	Q404, 401, 402	Q403		Q819, 821, 812 Q805, 804, 806, 818	Q605, 604, 813, 822



1
2
3
4
5
A
B
C
D
E
F
G
H
Front P.C.Board
Main P.C.Board
Audio/Regulator P.C.Board
LCD 401
IC401
μPD7228AG
LCD DRIVER
IC251
NJM4580E
BUFFER AMP
RESET CONTROL
IC402
L78LR05GFA
Q403
DTC124K
START UP
VREF
PROTE-CTOR
ERROR AMP
RESSET
VO DET
LAMP REGULATOR
Q404
2SD874A
DIMMER CONTROL
Q401
DTC124K
Q402
DTC124EU
PL401 6.7V-85mA
PL402 6V-70mA
PL403 6V-70mA
PL404 6V-70mA
PL405 6V-70mA
ZD401 RD9.1HB3
LD401~406 MBG4868K
TH401 10K
RESET S417
UP S401
TUNE S402
A.P.I S403
T.INFO S404
DX S405
D.A.P S406
TUNER BAND S407
(EJECT) S408
DN S409
M1 CLEAR S410
M2 P.T.M S411
M3 O.T.M S412
M4 M.I.X S413
M5 REPEAT S414
M6 SCAN S415
DISC ▶/II S416
S401~417 SKHLAJ
CH902
CB902
GND
Vcc
Lch-OUT
Rch-OUT
Lch-IN
Rch-IN
1/2Vcc
LAMP
VLCD
DIM
CLK
SI
CS
C/D
SCK
Vss
ADO
RST
ADI
BUSY
CB802
CH802
R-L
F-L
R-R
F-R
-G
MUTE
Lch
Rch
P.ANT
REM-ON
1/2 Vcc
AUDIO +B
CB803
CH803
OUT-REM
A-MUTE
IF-MUTE
POWER ON
+B
ACC HOLD
BAT HOLD
+5V
VDD
BATT
IGN
GND
PRE AMP
1/2 Vcc (FOR AUDIO)
TEMPERAT
IC203
BA15532F
IC204
Q819
DTA124EU
Q821
DTC124EU
D807
DAN202U
D808
DAN202U
Q822
DTC124EU
MUTING DRIVER
POWER ANTENNA CONTROL CIRCUIT
Q812
2SA1576
Q813
DTC124K
D805
DA204U
IC603
S-8054
AUDIO +B
IC803
M5236ML
ASO PROTECTOR
OVER CURRENT PROTECTOR
START CIRCUIT
REF. VOLT GENERATOR
Q804
2SB1240
Q805
2SB1240
Q806
DTA124EU
Q818
DTC124EU
Q604
DTA124EU
Q605
2SC2412K
ZD601
RD5.6MB2
BATTERY DETECTOR


IC251
IC402
IC803
IC203
IC204
IC603
Q403
Q819,821,812
Q805,804,806,818
Q605,604,813,822
Q820
Q814,817
Q204,203
Q608
Q815
Q816
IC251 NJM4580E
BUFFER AMP
Main P.C.Board
CB802
CH802
R-L
F-L
R-R
F-R
-G
MUTE
Lch
Rch
P.ANT
REM-ON
1/2 Vcc
AUDIO +B
PRE AMP
1/2 Vcc (FOR AUDIO)
TEMPERATURE DETECTOR
IC203 BA15532F
IC204 BA4560F
Q203 DTC343T
Q204 DTC343T
MUTING
GND
Vcc
Lch-OUT
Rch-OUT
Lch-IN
Rch-IN
1/2Vcc
LAMP
VLCD
DIM
CLK
SI
CS
C/D
SCK
Vss
ADO
RST
ADI
BUSY
CH902
CB902
RESET CONTROL
Q403 DTC124K
IC402 L78LR05GFA
START UP
VREF
PROTE-CTOR
ERROR AMP
RESSET
VO DET
RESET S417
TH401 10K
T.INFO S404
DX S405
D.A.P S406
TUNER BAND S407
(EJECT) ▲ S408
M3 O.T.M S412
M4 M.I.X S413
M5 REPEAT S414
M6 SCAN S415
DISC ▶/II S416
S401∼417 SKHLAJ
CB803
CH803
OUT-REM
A-MUTE
IF-MUTE
POWER ON
+B
ACC HOLD
BAT HOLD
+5V
VDD
BATT
IGN
GND
Q819 DTA124EU
Q821 DTC124EU
D807 DAN202U
D808 DAN202U
Q820 2SA1037K
D809 DAN202U
ZD805 RD10M82
Q822 DTC124EU
MUTING DRIVER
D810 DAN202U
D806 DSM10
POWER ANTENNA CONTROL CIRCUIT
Q812 2SA1576
Q814 2SB1132
Q815 2SB1132
REMOTE ON SWITCHING
Q813 DTC124K
D805 DA204U
Q817 DTC124EU
Q816 DTC124EU
Audio/Regulator P.C.Board
AUDIO +B
IC803 M5236ML
ASO PROTECTOR
OVER CURRENT PROTECTOR
START CIRCUIT
REF. VOLT GENERATOR
Q804 2SB1240
Q805 2SB1240
Q806 DTA124EU
Q818 DTC124EU
IC603 S-8054ALO
D603 MA151WK
D612 ISS133
Q604 DTA124EU
Q605 2SC2412K
BATTERY DETECTOR
ZD601 RD5.6MB2
Q608 2SD1858
ZD602 HZS603L
V. STABILIZER
OUT
Vref

D
E
F
G
H
I
J
K

IC401

1	PULSE	17	PULSE	33	5V	49	1.9V	65	1.9V
2	PULSE	18	PULSE	34	0V	50	PULSE	66	1.9V
3	PULSE	19	PULSE	35	PULSE	51	PULSE	67	1.9V
4	0V	20	PULSE	36	PULSE	52	1.9V	68	1.9V
5	0V	21	-1V	37	0V	53	PULSE	69	1.9V
6	PULSE	22	3.4V	38	0V	54	PULSE	70	1.9V
7	PULSE	23	0V	39	PULSE	55	PULSE	71	1.9V
8	1.8V	24	0.4V	40	0V	56	PULSE	72	1.9V
9	PULSE	25	1.8V	41	PULSE	57	PULSE	73	1.9V
10	PULSE	26	1.8V	42	0V	58	PULSE	74	PULSE
11	PULSE	27	PULSE	43	1.9V	59	PULSE	75	PULSE
12	PULSE	28	0V	44	0V	60	PULSE	76	PULSE
13	PULSE	29	0V	45	PULSE	61	PULSE	77	1.9V
14	PULSE	30	0V	46	PULSE	62	PULSE	78	PULSE
15	PULSE	31	PULSE	47	1.9V	63	1.9V	79	PULSE
16	PULSE	32	PULSE	48	1.9V	64	1.9V	80	PULSE

IC402

1	12.7V
2	5.7V
3	0V
4	3.2V
5	4.8V

IC251

1	PULSE
2	4.3V
3	4.3V
4	0V
5	4.3V
6	4.3V
7	PULSE
8	8.3V

IC203

1	PULSE
2	PULSE
3	4.2V
4	0V
5	4.2V
6	PULSE
7	PULSE
8	8.3V

IC204

1	4.3V
2	4.3V
3	0V
4	0V
5	4.3V
6	4.3V
7	4.3V
8	8.3V

IC603

1	5.4V
2	5.7V
3	0V

IC803

1	13.3V
2	0V
3	1.21V

	E	C	B
Q203	0V	0V	0V
Q204	0V	0V	0V
Q401	0V	0.4V	7.5V
Q402	0V	0.4V	7.5V
Q403	0V	0V	3.3V
Q404	10.3V	12.7V	11V
Q604	5.3V	5.3V	0V
Q605	0V	0V	0.4V
Q608	5.6V	14.2V	6.2V
Q804	14.3V	14.2V	13.5V
Q805	13.8V	8.2V	13.2V
Q806	12.9V	12.9V	10V
Q812	14.1V	0V	14.1V
Q813	0V	14V	0V
Q814	14.1V	14.1V	13.4V
Q815	14.1V	14.1V	13.4V
Q816	0V	0V	4.8V
Q817	0V	0V	9.5V
Q818	0V	0V	4.8V
Q819	14.2V	0V	13.7V
Q820	9.9V	0V	9.3V
Q821	0V	13.7V	0V
Q822	0V	0V	4.8V

[Measuring Conditions]

- Power Supply Voltage : DC14V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions :
  - CD : Be playing back the 2nd Music of the test CD (YEDS-18)
  - TUNER : No signal input
    - FM : 98.1MHz
    - MW : 999kHz
    - LW : 216kHz

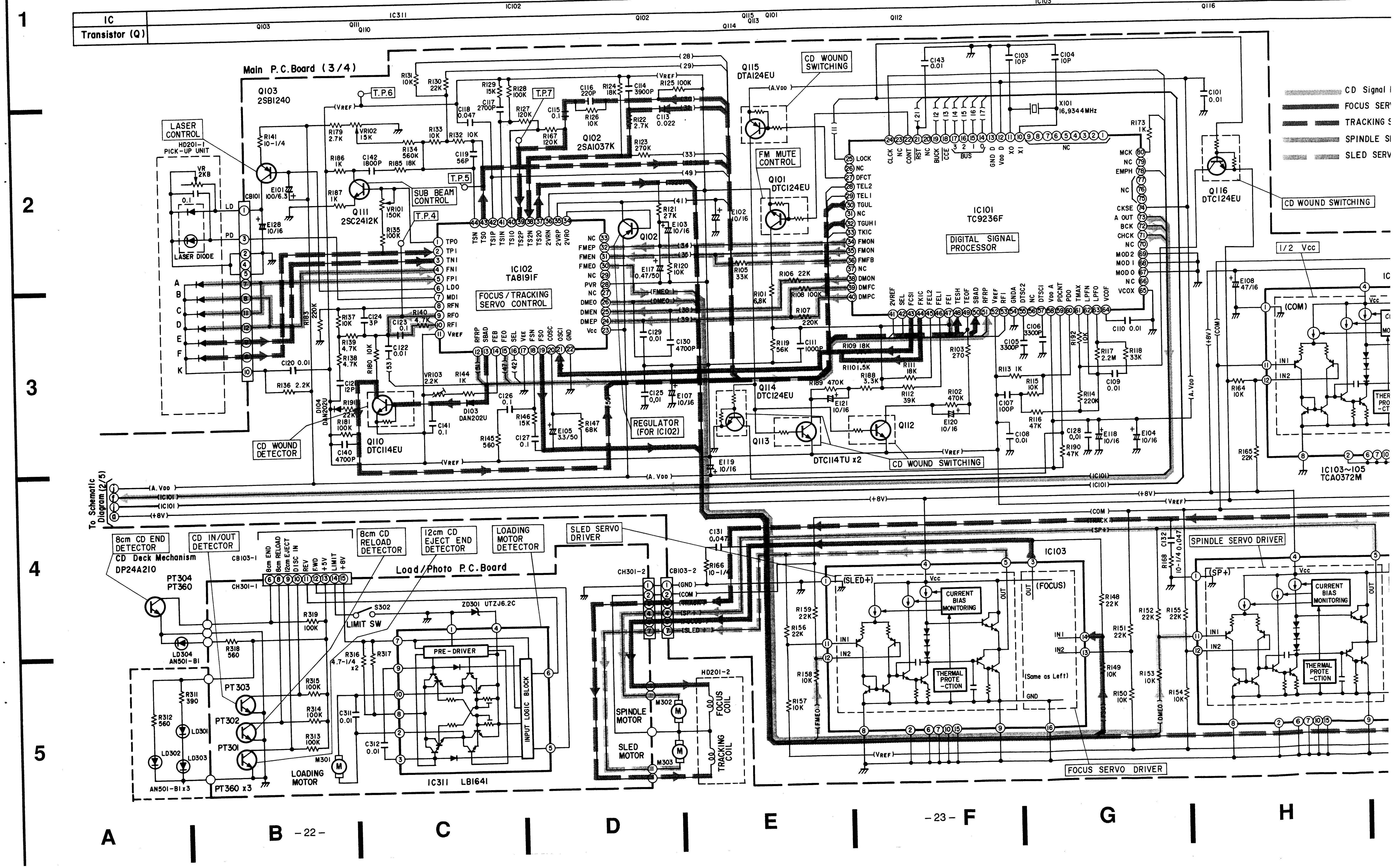
Lch Signal Line

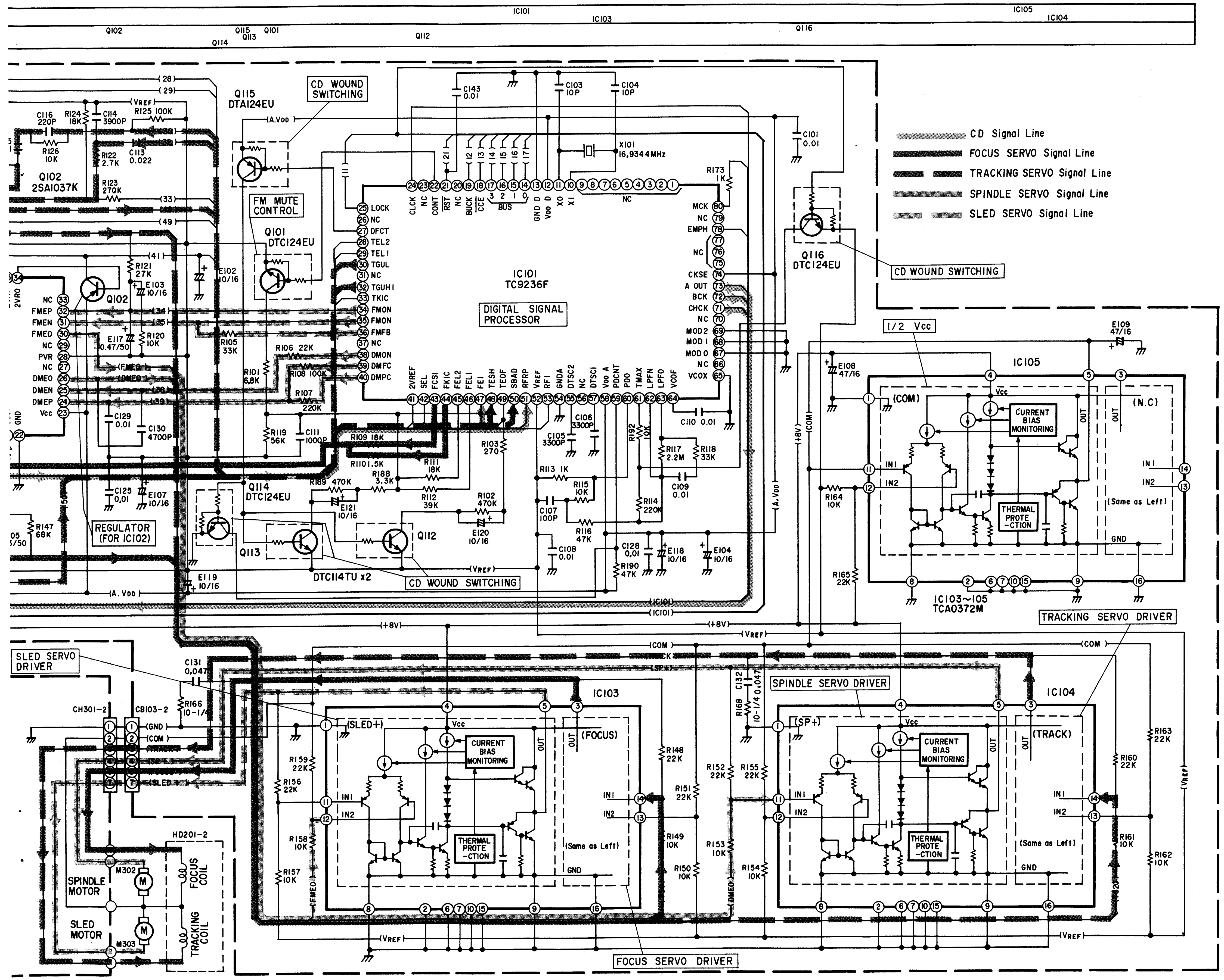
Rch Signal Line

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$

Schematic Diagram (4/5)


IC
Transistor (Q)
IC311
IC102
IC101
IC103
Q103
Q111
Q110
Q102
Q115
Q113
Q101
Q114
Q112
Q116
Main P.C.Board (3/4)
Q103
2SB1240
LASER CONTROL
HD201-1 PICK-UP UNIT
LASER DIODE
CB101
LD
PD
T.P.6
T.P.7
T.P.5
T.P.4
SUB BEAM CONTROL
Q111
2SC2412K
Q102
2SA1037K
IC102
TA8191F
FOCUS/TRACKING SERVO CONTROL
REGULATOR (FOR IC102)
CD WOUND DETECTOR
Q110
DTC114EU
D104
DAN202U
D103
DAN202U
Q115
DTA124EU
CD WOUND SWITCHING
FM MUTE CONTROL
Q101
DTC124EU
Q114
DTC124EU
Q113
DTC114TU x2
Q112
IC101
TC9236F
DIGITAL SIGNAL PROCESSOR
X101
16,9344MHz
Q116
DTC124EU
CD WOUND SWITCHING
1/2 Vcc
CD Signal
FOCUS SERVO
TRACKING SERVO
SPINDLE SERVO
SLED SERVO
IC103~105
TCA0372M
To Schematic Diagram (2/5)
A.VDD
IC101
+8V
8cm CD END DETECTOR
CD IN/OUT DETECTOR
8cm CD RELOAD DETECTOR
12cm CD EJECT END DETECTOR
LOADING MOTOR DETECTOR
SLED SERVO DRIVER
CD Deck Mechanism
DP24A210
PT304
PT360
LD304
AN501-B1
PT303
PT302
PT301
LD301
LD302
LD303
AN501-B1 x3
PT360 x3
Load/Photo P.C.Board
CB103-1
CH301-1
S302
LIMIT SW
ZD301 UTZJ6.2C
PRE-DRIVER
INPUT LOGIC BLOCK
IC311 LB1641
LOADING MOTOR
M301
CH301-2
CB103-2
SPINDLE MOTOR
M302
SLED MOTOR
M303
HD201-2
FOCUS COIL
TRACKING COIL
IC103
CURRENT BIAS MONITORING
THERMAL PROTE-CTION
(SLED+)
(FOCUS)
(Same as Left)
FOCUS SERVO DRIVER
SPINDLE SERVO DRIVER
(SP+)
A
B
C
D
E
F
G
H
1
2
3
4
5


IC101
IC103
IC105
IC104
Q102
Q115
Q113
Q101
Q114
Q112
Q116
CD Signal Line
FOCUS SERVO Signal Line
TRACKING SERVO Signal Line
SPINDLE SERVO Signal Line
SLED SERVO Signal Line
CD WOUND SWITCHING
Q115 DTA124EU
FM MUTE CONTROL
Q101 DTC124EU
Q102 2SA1037K
IC101 TC9236F
DIGITAL SIGNAL PROCESSOR
X101 16.9344MHz
Q116 DTC124EU
Q114 DTC124EU
Q113
Q112
DTC114TU x2
REGULATOR (FOR IC102)
CD WOUND SWITCHING
1/2 Vcc
IC105
(COM)
(N.C)
CURRENT BIAS MONITORING
THERMAL PROTE -CTION
(Same as Left)
IC103~105 TCA0372M
TRACKING SERVO DRIVER
SLED SERVO DRIVER
IC103
(SLED+)
(FOCUS)
SPINDLE SERVO DRIVER
IC104
(SP+)
(TRACK)
FOCUS SERVO DRIVER
CH301-2
CB103-2
HD201-2
SPINDLE MOTOR
M302
SLED MOTOR
M303
FOCUS COIL
TRACKING COIL
(+8V)
(VREF)
(COM)
(A.VDD)

IC101

1	4.8V	17	PULSE	33	1.6V	49	0V	65	0V
2	4.8V	18	PULSE	34	2.1V	50	0V	66	PULSE
3	PULSE	19	PULSE	35	0V	51	0V	67	0V
4	PULSE	20	PULSE	36	2V	52	0V	68	0V
5	PULSE	21	4.9V	37	4.8V	53	0V	69	0V
6	PULSE	22	0V	38	0V	54	0V	70	PULSE
7	PULSE	23	PULSE	39	PULSE	55	0V	71	PULSE
8	PULSE	24	0V	40	PULSE	56	0V	72	PULSE
9	PULSE	25	5V	41	4.2V	57	PULSE	73	PULSE
10	0.8V	26	4.8V	42	5V	58	5V	74	5V
11	PULSE	27	PULSE	43	2.4V	59	PULSE	75	0V
12	5V	28	2V	44	0V	60	PULSE	76	4.8V
13	0V	29	2V	45	0V	61	0V	77	0V
14	PULSE	30	2.1V	46	PULSE	62	0V	78	0V
15	PULSE	31	0V	47	0V	63	0V	79	4.8V
16	PULSE	32	2.1V	48	0V	64	0V	80	PULSE

IC102

1	1.7V	12	PULSE	23	5V	34	4.4V
2	2V	13	2.7V	24	PULSE	35	0V
3	2V	14	2V	25	2.1V	36	2.1V
4	2V	15	PULSE	26	PULSE	37	PULSE
5	2V	16	4.9V	27	PULSE	38	2V
6	3.9V	17	0V	28	2.1V	39	2V
7	0.1V	18	PULSE	29	2.1V	40	PULSE
8	2.1V	19	PULSE	30	2V	41	2V
9	PULSE	20	PULSE	31	2V	42	2.1V
10	PULSE	21	2.4V	32	2.1V	43	2.1V
11	2.1V	22	0V	33	PULSE	44	2.1V

IC103

1	0V
2	0V
3	PULSE
4	8.5V
5	4V
6	0V
7	0V
8	0V
9	0V
10	0V
11	2.6V
12	2.6V
13	2.6V
14	2.6V
15	0V
16	0V

IC104

1	0V
2	0V
3	PULSE
4	8.5V
5	PULSE
6	0V
7	0V
8	0V
9	0V
10	0V
11	2.6V
12	2.6V
13	2.6V
14	2.6V
15	0V
16	0V

IC105

1	0V
2	0V
3	0.3V
4	8.5V
5	4V
6	0V
7	0V
8	0V
9	0V
10	0V
11	4V
12	4V
13	PULSE
14	PULSE
15	0V
16	0V

	E	C	B
Q101	2.1V	2.1V	0V
Q102	5V	4.1V	4.3V
Q103	4.58V	1.8V	3.9V
Q110	2.1V	2.4V	2.4V
Q111	1.1V	1.1V	1.7V
Q112	2.1V	1.8V	0V
Q113	2.1V	1.5V	0V
Q114	2.2V	PULSE	0V
Q115	5V	0V	4.8V
Q116	0V	PULSE	0V

IC311

1	0V
2	6V
3	0V
4	0V
5	0V
6	0V
7	0V
8	0V
9	0V
10	6V

[Measuring Conditions]
- Power Supply Voltage : DC14V
- Measuring Meter : Digital Multi Voltmeter
- Measuring Point Reference : Between Ground
- Measuring Conditions :
  CD : Be playing back the 2nd Music of the test CD (YEDS-18)
  TUNER : No signal input
  FM : 98.1MHz
  MW : 999kHz
  LW : 216kHz

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$

Electrical Parts List

Resistor : Carbon resistors under 1 / 4 watts are not mentioned in the parts list, please confirm them by schematic diagram.
Capacitor : μF = microfarads, pF = picofarads

Abbreviations

RES. = Resistor
C.F. = Carbon Film
M.F. = Metal Film
M.O. = Metal Oxide Film
M.P. = Metal Plate
TR. = Transistor
TRANS. = Transformer
CP. = Chip

CAP. = Capacitor
ELY. = Electrolytic
CER. = Ceramic
MYL. = Mylar
TAN. = Tantalum
POLY. = Polystyrol
PP. = Polypropylene
PLT. = Polyethylene
PF. = Polyester Film

Main P. C. Board

IC's

	Symbol No.	Part No.	Description
	IC001	51T40941U03	MC14066BFL1
	IC002	51T15853W02	LC7218M
○	IC003	51T35087W02	35087W02
△	IC003	51T35087W04	35087W04
	IC006	51T94316F02	AN7465S
○	IC007	51T94121F01	BA4558F
○	or	51T93336F01	NJM4558M
○	IC008	51T93332F01	NJM2903M
	IC009	51T93333F01	NJM2904M
	IC010	51T93333F01	NJM2904M
	IC101	51T25985W01	TC9236F
	IC102	51T25984W01	TA8191F
	IC103	51T15264W01	TCA0372M
	IC104	51T15264W01	TCA0372M
	IC105	51T15264W01	TCA0372M
	IC106	51T35105W02	SM5840CS
	IC107	51T25676W01	μPD6376
	IC109	51T35229W01	TC7SU04F
	IC201	51T40941U03	MC14066BFL1
	IC202	51T25154W01	BA15532F
	IC205	51T94121F01	BA4558F
	or	51T93336F01	NJM4558M
	IC206	51T93532F07	TC4S66F
	IC301	51T92001F01	BA4560F
	or	51T93338F01	NJM4560E
	IC501	51T25681W01	25681W01
	IC502	51T35086W02	μPD74HC373
	IC503	51T84723F02	LC3516AML
	or	51T90640F01	CXK5816M
	IC504	51T93532F08	TC4S30F
	IC505	51T93532F04	TC4S81F
	IC601	51T25829W01	25829W01
	IC602	51T95014F05	S - 8052ALR - LF
	IC801	51T15510W01	MC34063M
	IC802	51T80338F01	NJM7805FA
	IC804	51T94121F01	BA4558F
	or	51T93336F01	NJM4558M

Transistors

	Symbol No.	Part No.	Description
	Q001	48T94606F03	CP., DTC124EU
	Q003	48T94606F06	CP., DTC114EU
	Q004	48T73888F13	CP., FMC3
	Q005	48T94606F03	CP., DTC124EU
	Q006	48T90181F05	2SD1993
	Q007	48T90181F05	2SD1993
	Q008	48T90181F05	2SD1993
	Q009	48T90181F05	2SD1993
	Q010	48T73888F09	CP., FMG2
	Q012	48T52438F01	CP., 2SD601A
	Q013	48T84234F03	2SB1238
	Q014	48T94606F06	CP., DTC114EU
	Q015	48T84234F03	2SB1238
	Q016	48T15289W03	2SD2008Q
	Q017	48T83415F03	2SD1858
	Q018	48T73888F13	CP., FMC3
	Q023	48T73888F10	CP., FMG4
	Q024	48T73888F10	CP., FMG4
	Q031	48T94606F03	CP., DTC124EU
	Q033	48T94606F05	CP., DTC114TU
	Q034	48T94606F05	CP., DTC114TU
	Q035	48T94606F53	CP., DTA124EU
	Q036	48T94606F03	CP., DTC124EU
	Q037	48T94606F53	CP., DTA124EU
	Q038	48T94606F05	CP., DTC114TU
△	Q040	48T94606F62	CP., DTA144TU
	Q041	48T94606F03	CP., DTC124EU
	Q042	48T73888F09	CP., FMG2
	Q043	48T94606F03	CP., DTC124EU
△	Q044	48T52438F01	CP., 2SD601A
△	Q045	48T63420F01	CP., 2SA1037K
	Q101	48T94606F03	CP., DTC124EU
	Q102	48T63420F01	CP., 2SA1037K
	Q103	48T84238F03	2SB1240
	Q104	48T84238F03	2SB1240
	Q105	48T81552F01	CP., 2SD1383K
	Q106	48T94606F03	CP., DTC124EU
	Q107	48T94606F53	CP., DTA124EU
	Q108	48T94606F03	CP., DTC124EU
	Q110	48T94606F06	CP., DTC114EU
	Q111	48T63417F01	CP., 2SC2412K
	Q112	48T94606F05	CP., DTC114TU
	Q113	48T94606F05	CP., DTC114TU

Notes : ○ : Serial Number between No.10718001B and No.10920500B Model Only,
△ : Serial Number after No.11021001M Model Only, Others : Common.

Symbol No.	Part No.	Description
Q114	48T94606F03	CP., DTC124EU
Q115	48T94606F53	CP., DTA124EU
Q116	48T94606F03	CP., DTC124EU
Q201	48T63788F04	CP., 2SD1328
Q202	48T63788F04	CP., 2SD1328
Q503	48T94606F03	CP., DTC124EU
Q504	48T94606F11	CP., DTC124TU
Q510	48T94606F53	CP., DTA124EU
Q511	48T94606F03	CP., DTC124EU
Q512	48T94606F53	CP., DTA124EU
Q601	48T94606F03	CP., DTC124EU
Q602	48T94606F03	CP., DTC124EU
Q603	48T94606F03	CP., DTC124EU
Q606	48T63419F01	CP., 2SA1036K
Q607	48T94606F03	CP., DTC124EU
Q609	48T94606F03	CP., DTC124EU
Q610	48T94606F03	CP., DTC124EU
Q611	48T94606F03	CP., DTC124EU
Q614	48T94606F53	CP., DTA124EU
Q615	48T94606F03	CP., DTC124EU
Q616	48T94606F03	CP., DTC124EU
Q620	48T94606F06	CP., DTC114EU
Q621	48T81552F01	CP., 2SD1383K
Q801	48T15511W02	CP., 2SB1261
Q802	48T94606F53	CP., DTA124EU
Q803	48T94606F03	CP., DTC124EU
Q810	48T56031F01	2SD1266
Q811	48T94606F03	CP., DTC124EU

Diodes

Symbol No.	Part No.	Description
D001	48T95117F01	CP., MA713
D003	48T52446F01	CP., MA151WK
D005	48T94608F03	CP., DAN202U
D008	48T94608F03	CP., DAN202U
D101	48T15512W01	CP., DSM10
D102	48T94608F03	CP., DAN202U
D103	48T94608F03	CP., DAN202U
D104	48T94608F03	CP., DAN202U
D601	48T94608F03	CP., DAN202U
D602	48T95117F01	CP., MA713
D605	48T94608F03	CP., DAN202U
D609	48T52446F01	CP., MA151WK
D610	48T94608F03	CP., DAN202U
D611	48T94608F03	CP., DAN202U
D802	48T81044F01	10E2
D803	48T15702W01	CP., SB05-05CP
D804	48T94608F01	CP., DA204U
ZD001	48T62934F19	Zener, CP. RD5.1MB2
ZD002	48T25766W25	Zener, HZS9C2L
ZD003	48T25766W01	Zener, HZS6A1L

Symbol No.	Part No.	Description
ZD004	48T25766W25	Zener, HZS9C2L
ZD500	48T45012W07	Zener, MTZJ2.7A
ZD603	48T25801W12	Zener, HZS5CLL
ZD802	48T62934F49	Zener, CP. RD13MB2
ZD803	48T25766W24	Zener, HZS9C1L
ZD804	48T25801W11	Zener, HZS5BLL

Buzzer / Thermistor

Symbol No.	Part No.	Description
BZ601	50T25148W01	CB13PA-X
TH601	48T93439F06	Thermistor, 100K ohm

Coils

Symbol No.	Part No.	Description
△ L001	24T25798W13	Inductor, 1mH
L801	24T16271W13	RCR875D 220μH
L802	24T16271W13	RCR875D 220μH

Crystals

Symbol No.	Part No.	Description
X001	91T25773W43	7.2MHz
X002	91T25773W44	CER. Lock, 7.372MHz
X003	91T15857W01	CER. Lock, 456kHz
X101	91T25806W92	16.9344MHz
X601	91T25773W42	7.15909MHz

Capacitors

Symbol No.	Part No.	Description	
C001	08S65128F69	CP.,	0.01μF
E001	23S61523F29	ELY.,	1μF / 50V
C002	08S65128F69	CP.,	0.01μF
E002	23S61523F13	ELY.,	22μF / 16V
C003	08S65128F73	CP.,	0.033μF
C004	08T15399W02	CP.,	0.033μF
E004	23T74437F46	TAN.,	0.33μF / 35V
C005	08T15399W02	CP.,	0.033μF
C006	08T90316F29	TF,	0.1μF
E006	23S61523F34	ELY.,	100μF / 10V
C007	08S65128F61	CP.,	2200pF
E007	23S61523F05	ELY.,	22μF / 6.3V
C008	08T90316F17	TF,	0.01μF
E008	23T25149W05	ELY.,	1μF / 50V
C009	08S65128F69	CP.,	0.01μF
E009	23T25149W05	ELY.,	1μF / 50V
C010	08S65128F72	CP.,	0.022μF
E010	23S61523F15	ELY.,	47μF / 16V
E011	23S61523F12	ELY.,	10μF / 16V
E012	23S61523F13	ELY.,	22μF / 16V

Notes : ○ : Serial Number between No.10718001B and No.10920500B Model Only,
△ : Serial Number after No.11021001M Model Only, Others : Common.

Symbol No.		Part No.	Description	
	C013	08S65128F69	CP.,	0.01μF
	E013	23S61523F25	ELY.,	0.1μF / 50V
	C014	08S65128F69	CP.,	0.01μF
	E014	23S61523F26	ELY.,	0.22μF / 50V
	C015	08S65128F69	CP.,	0.01μF
	E015	23S61523F29	ELY.,	1μF / 50V
	C016	08T90316F23	TF,	0.033μF
	E016	23S61523F17	ELY.,	4.7μF / 25V
	C017	08S65128F69	CP.,	0.01μF
	E017	23S61523F25	ELY.,	0.1μF / 50V
	C018	08S65128F69	CP.,	0.01μF
	C019	08S82122F23	CP.,	27pF
	C020	08S82122F23	CP.,	27pF
	E020	23S61523F12	ELY.,	10μF / 16V
	C021	08S65128F69	CP.,	0.01μF
	E021	23S61523F25	ELY.,	0.1μF / 50V
	C022	08S65128F69	CP.,	0.01μF
	E022	23S61523F12	ELY.,	10μF / 16V
○	E023	23S61523F12	ELY.,	10μF / 16V
	C024	08S65128F67	CP.,	6800pF
	E024	23S61523F12	ELY.,	10μF / 16V
	C025	08T52448F03	PP.,	390pF
	E025	23S61523F25	ELY.,	0.1μF / 50V
	C026	08S65128F67	CP.,	6800pF
○	E026	23S61523F29	ELY.,	1μF / 50V
	C027	08S65128F67	CP.,	6800pF
○	E027	23S61523F29	ELY.,	1μF / 50V
	C028	08S65128F69	CP.,	0.01μF
△	E028	23S61523F29	ELY.,	1μF / 50V
	C029	08S65128F51	CP.,	470pF
	C030	08S65128F69	CP.,	0.01μF
	C031	08S65128F63	CP.,	3300pF
	C032	08T15399W03	CP.,	0.047μF
	C033	08T15399W03	CP.,	0.047μF
○	E033	23S61523F12	ELY.,	10μF / 16V
	C034	08S65128F65	CP.,	4700pF
	E034	23S61523F12	ELY.,	10μF / 16V
	C035	08S65128F65	CP.,	4700pF
	E035	23S61523F17	ELY.,	4.7μF / 25V
	C036	08T15399W01	CP.,	0.022μF
	C040	23T82372F19	ELY., (B.P)	2.2μF / 50V
	E040	23S61523F29	ELY.,	1μF / 50V
	C041	08S65128F72	CP.,	0.022μF
△	C042	08S65128F69	CP.,	0.01μF
△	C043	08S65128F69	CP.,	0.01μF
△	C044	08S65128F61	CP.,	2200pF
△	C045	08S65128F69	CP.,	0.01μF
	C046	08S65128F57	CP.,	1000pF
	C050	08S65128F65	CP.,	4700pF
	C053	08S65128F69	CP.,	0.01μF
	C101	08S65128F69	CP.,	0.01μF

Symbol No.	Part No.	Description	
E101	23S61523F08	ELY.,	100μF / 6.3V
E102	23T74437F32	TAN.,	10μF / 16V
C103	08S82122F13	CP.,	10pF
E103	23S61523F12	ELY.,	10μF / 16V
C104	08S82122F13	CP.,	10pF
E104	23T74437F32	TAN.,	10μF / 16V
C105	08S65128F63	CP.,	3300pF
E105	23S61523F31	ELY.,	3.3μF / 50V
C106	08S65128F63	CP.,	3300pF
E106	23T25149W09	ELY.,	10μF / 16V
C107	08S65128F35	CP.,	100pF
E107	23T74437F32	TAN.,	10μF / 16V
C108	08S65128F69	CP.,	0.01μF
E108	23S61523F15	ELY.,	47μF / 16V
C109	08S65128F69	CP.,	0.01μF
E109	23S61523F15	ELY.,	47μF / 16V
C110	08S65128F69	CP.,	0.01μF
E110	23S61523F17	ELY.,	4.7μF / 25V
C111	08S65128F57	CP.,	1000pF
E111	23T25149W17	ELY.,	47μF / 6.3V
E112	23T25149W17	ELY.,	47μF / 6.3V
C113	08T15399W01	CP.,	0.022μF
E113	23T25149W09	ELY.,	10μF / 16V
C114	08S65128F64	CP.,	3900pF
E114	23T25149W09	ELY.,	10μF / 16V
C115	08T15807W05	CP.,	0.1μF
C116	08S65128F43	CP.,	220pF
C117	08S65128F62	CP.,	2700pF
E117	23S61523F28	ELY.,	0.47μF / 50V
C118	08T15399W03	CP.,	0.047μF
E118	23T74437F32	TAN.,	10μF / 16V
C119	08S65128F29	CP.,	56pF
E119	23T74437F32	TAN.,	10μF / 16V
C120	08S65128F69	CP.,	0.01μF
E120	23S61523F12	ELY.,	10μF / 16V
C121	08S65128F13	CP.,	12pF
E121	23S61523F12	ELY.,	10μF / 16V
C122	08S53332F47	CP.,	0.01μF
C123	08T15807W05	CP.,	0.1μF
C124	08S82122F06	CP.,	3pF
C125	08S65128F69	CP.,	0.01μF
C126	08T15807W05	CP.,	0.1μF
C127	08T15807W05	CP.,	0.1μF
C128	08S65128F69	CP.,	0.01μF
E128	23T74437F32	TAN.,	10μF / 16V
C129	08S65128F69	CP.,	0.01μF
C130	08S65128F65	CP.,	4700pF
C131	08S65128F74	CP.,	0.047μF
C132	08S65128F74	CP.,	0.047μF
C133	08S65128F69	CP.,	0.01μF
C135	08S65128F69	CP.,	0.01μF

Notes : ○ : Serial Number between No.10718001B and No.10920500B Model Only,
△ : Serial Number after No.11021001M Model Only, Others : Common.

Symbol No.	Part No.	Description
C136	08S65128F12	CP., 10pF
C140	08S53332F43	CP., 4700pF
C141	08T15807W05	CP., 0.1μF
E141	23T74437F32	TAN., 10μF / 16V
C142	08S65128F60	CP., 1800pF
C143	08S65128F69	CP., 0.01μF
C201	08S65128F25	CP., 39pF
E201	23T25149W09	ELY., 10μF / 16V
C202	08S65128F25	CP., 39pF
E202	23T25149W09	ELY., 10μF / 16V
C203	08S82122F21	CP., 22pF
C204	08S82122F21	CP., 22pF
C205	08S82122F49	CP., 330pF
C206	08S82122F59	CP., 330pF
C207	08S82122F59	CP., 820pF
C208	08S82122F59	CP., 820pF
E208	23T74437F32	TAN., 10μF / 16V
E212	23T25149W09	ELY., 10μF / 16V
C301	08S82122F57	CP., 680pF
C302	08S82122F57	CP., 680pF
C303	08S82122F45	CP., 220pF
E303	23T74437F32	TAN., 10μF / 16V
C304	08S82122F45	CP., 220pF
E304	23T74437F32	TAN., 10μF / 16V
E305	23T25149W09	ELY., 10μF / 16V
C502	08S53332F57	CP., 0.1μF
E502	23S61523F08	ELY., 100μF / 6.3V
C503	08S65128F76	CP., 0.1μF
C504	08S65128F35	CP., 100pF
C505	08S65128F35	CP., 100pF
E505	23T74437F47	TAN., 0.47μF / 35V
C506	08S65128F35	CP., 100pF
E506	23T74437F47	TAN., 0.47μF / 35V
C510	08S82122F23	CP., 27pF
C511	08S82122F23	CP., 27pF
C512	08S65128F43	CP., 220pF
C520	08S65128F74	CP., 0.047μF
E601	23T74437F32	TAN., 10μF / 16V
E602	23S61523F08	ELY., 100μF / 6.3V
C603	08S65128F65	CP., 4700pF
C604	08S65128F35	CP., 100pF
C605	08S65128F35	CP., 100pF
E605	23S61523F28	ELY., 0.47μF / 50V
C606	08S65128F69	CP., 0.01μF
E606	23S61523F12	ELY., 10μF / 16V
E607	23S61523F12	ELY., 10μF / 16V
C608	08S65128F69	CP., 0.01μF
C610	08S82122F23	CP., 27pF
E610	23S61523F12	ELY., 10μF / 16V
C611	08S82122F23	CP., 27pF
C801	08S65128F76	CP., 0.1μF
E801	23T25364W01	ELY., 1000μF / 16V
C802	08S65128F37	CP., 120pF
E802	23S61523F15	ELY., 47μF / 16V
E803	23S61523F12	ELY., 10μF / 16V
C804	08S65128F69	CP., 0.01μF
E804	23T25051W20	ELY., 470μF / 10V
E805	23T74437F49	TAN., 1μF / 35V
C806	08S65128F57	CP., 1000pF
C807	08S65128F69	CP., 0.01μF
E809	23S61523F12	ELY., 10μF / 16V
E810	23S61523F12	ELY., 10μF / 16V
E811	23S61523F34	ELY., 100μF / 10V
E812	23S61523F12	ELY., 10μF / 16V
E813	23S61523F08	ELY., 100μF / 6.3V
E818	23T25149W17	ELY., 47μF / 6.3V

Resistors (All resistors are chip 1/10W ± 5% unless otherwise noted.)

R001	06S64995F53	1K ohm
R002	06S64995F53	1K ohm
R003	06S64995F77	10K ohm
R004	06S64995F37	220 ohm
R005	06S64995F53	1K ohm
R006	06S64995F65	3.3K ohm
R007	06S64995F05	10 ohm
R008	06S64995F75	8.2K ohm
R009	06S64995F71	5.6K ohm
R010	06S64995F53	1K ohm
R011	06S64996F02	100K ohm
R012	06S64995F53	1K ohm
R013	06S64995F71	5.6K ohm
R014	06S64995F85	22K ohm
R015	06S64995F53	1K ohm
R016	06S64995F47	560 ohm
R017	06S64995F93	47K ohm
R018	06S64995F73	6.8K ohm
R019	06S64995F73	6.8K ohm
R020	06S64996F02	100K ohm
R021	06S64996F02	100K ohm
R022	06S64995F65	3.3K ohm
R023	06T70072F53	1K ohm 1/4W
R024	06T70072F65	3.3K ohm 1/4W
R025	06T70072F65	3.3K ohm 1/4W
R026	06T70072F53	1K ohm 1/4W
R027	06S64995F65	3.3K ohm
R028	06S64996F18	470K ohm
R029	06T70072F05	10 ohm 1/4W
R030	06S64996F08	180K ohm

	Symbol No.	Part No.	Description	Symbol No.	Part No.	Description
	R031	06S64995F79	12K ohm	R097	06S64995F77	10K ohm
	R032	06S64995F65	3.3K ohm	R098	06S64995F81	15K ohm
	R033	06S64995F85	22K ohm	R099	06S64995F81	15K ohm
	R034	06S64995F93	47K ohm	R101	06S64995F73	6.8K ohm
	R035	06S64995F77	10K ohm	R102	06S64996F18	470K ohm
	R036	06S64995F79	12K ohm	R103	06S64995F39	270 ohm
	R037	06S64995F79	12K ohm	R105	06S64995F89	33K ohm
	R038	06S64995F81	15K ohm	R106	06S64995F85	22K ohm
	R039	06S64995F65	3.3K ohm	R107	06S64996F10	220K ohm
	R040	06S64995F69	4.7K ohm	R108	06S64996F02	100K ohm
	R041	06S64996F26	1M ohm	R109	06S64995F83	18K ohm
	R042	06S64995F57	1.5K ohm	R110	06S64995F57	1.5K ohm
	R043	06S64995F77	10K ohm	R111	06S64995F83	18K ohm
	R045	06S64996F02	100K ohm	R112	06S64995F91	39K ohm
	R046	06S64995F81	15K ohm	R113	06S64995F53	1K ohm
	R049	06S64995F65	3.3K ohm	R114	06S64996F10	220K ohm
	R050	06S64995F65	3.3K ohm	R115	06S64995F77	10K ohm
	R051	06S64995F77	10K ohm	R116	06S64995F93	47K ohm
	R052	06S64995F77	10K ohm	R117	06S64996F30	2.2M ohm
	R054	06S64996F14	330K ohm	R118	06S64995F89	33K ohm
	R055	06S64995F41	330 ohm	R119	06S64995F95	56K ohm
	R056	06S64996F02	100K ohm	R120	06S64995F77	10K ohm
	R057	06S64996F02	100K ohm	R121	06S64995F87	27K ohm
	R058	06S64995F84	20K ohm	R122	06S64995F63	2.7K ohm
	R059	06S64995F53	1K ohm	R123	06S64996F12	270K ohm
	R060	06S64995F53	1K ohm	R124	06S64995F83	18K ohm
○	R061	06S64996F22	680K ohm	R125	06S64996F02	100K ohm
○	R062	06S64996F22	680K ohm	R126	06S64995F77	10K ohm
○	R063	06S64996F02	100K ohm	R127	06S64996F04	120K ohm
○	R064	06S64996F02	100K ohm	R128	06S64996F02	100K ohm
	R065	06S64995F85	22K ohm	R129	06S64995F81	15K ohm
	R066	06S64995F77	10K ohm	R130	06S64995F85	22K ohm
	R067	06S64995F81	15K ohm	R131	06S64995F77	10K ohm
	R069	06S64996F02	100K ohm	R132	06S64995F77	10K ohm
	R070	06T70072F29	100 ohm 1/4W	R133	06S64995F77	10K ohm
	R072	06S64995F77	10K ohm	R134	06S64996F20	560K ohm
	R073	06S64995F77	10K ohm	R135	06S64996F02	100K ohm
	R074	06S64995F77	10K ohm	R136	06S64995F61	2.2K ohm
	R075	06S64995F77	10K ohm	R137	06S64995F77	10K ohm
	R076	06S64995F53	1K ohm	R138	06S64995F69	4.7K ohm
	R077	06S64995F53	1K ohm	R139	06S64995F69	4.7K ohm
	R078	06S64995F65	3.3K ohm	R140	06S64995F69	4.7K ohm
	R080	06S53330F93	47K ohm 1/8W	R141	06T70072F05	10 ohm 1/4W
	R087	06S53330F95	56K ohm 1/8W	R144	06S64995F53	1K ohm
○	R088	06S64996F26	1M ohm	R145	06S64995F47	560 ohm
○	R089	06S64996F26	1M ohm	R146	06S64995F81	15K ohm
○	R090	06S64995F76	9.1K ohm	R147	06S64995F97	68K ohm
○	R091	06S64995F77	10K ohm	R148	06S64995F85	22K ohm
○	R092	06S64995F76	9.1K ohm	R149	06S64995F77	10K ohm
○	R093	06S64995F77	10K ohm	R150	06S64995F77	10K ohm
	R094	06S64995F77	10K ohm	R151	06S64995F85	22K ohm

Notes : ○ : Serial Number between No.10718001B and No.10920500B Model Only,
△ : Serial Number after No.11021001M Model Only, Others : Common.

Symbol No.	Part No.	Description
R152	06S64995F85	22K ohm
R153	06S64995F77	10K ohm
R154	06S64995F77	10K ohm
R155	06S64995F85	22K ohm
R156	06S64995F85	22K ohm
R157	06S64995F77	10K ohm
R158	06S64995F77	10K ohm
R159	06S64995F85	22K ohm
R160	06S64995F85	22K ohm
R161	06S64995F77	10K ohm
R162	06S64995F77	10K ohm
R163	06S64995F85	22K ohm
R164	06S64995F77	10K ohm
R165	06S64995F85	22K ohm
R166	06T70072F05	10 ohm 1/4W
R167	06S64996F04	120K ohm
R168	06T70072F05	10 ohm 1/4W
R169	06S64995F53	1K ohm
R170	06S64995F53	1K ohm
R171	06S64995F53	1K ohm
R172	06S64995F53	1K ohm
R173	06S64995F53	1K ohm
R174	06S64995F77	10K ohm
R175	06S64995F77	10K ohm
R176	06T70072F53	1K ohm 1/4W
R177	06S64996F18	470K ohm
R179	06S64995F63	2.7K ohm
R180	06S53330F77	10K ohm 1/8W
R181	06S53331F02	100K ohm 1/8W
R183	06S64996F10	220K ohm
R185	06S64995F83	18K ohm
R186	06S64995F53	1K ohm
R187	06S64995F53	1K ohm
R188	06S64995F65	3.3K ohm
R189	06S64996F18	470K ohm
R190	06S64995F93	47K ohm
R191	06S64995F85	22K ohm
R192	06S64995F77	10K ohm
R201	06S64996F08	180K ohm
R202	06S64996F08	180K ohm
R203	06S64995F79	12K ohm
R204	06S64995F79	12K ohm
R205	06T70072F61	2.2K ohm 1/4W
R206	06T70072F61	2.2K ohm 1/4W
R207	06S64995F37	220 ohm
R223	06S64995F93	47K ohm
R224	06S64995F93	47K ohm
R225	06S64995F83	18K ohm
R226	06S64995F83	18K ohm
R227	06S64996F02	100K ohm
R228	06S64996F02	100K ohm

	Symbol No.	Part No.	Description
	R301	06S64995F89	33K ohm
	R302	06S64995F89	33K ohm
	R303	06S64995F72	6.2K ohm
	R304	06S64995F72	6.2K ohm
	R305	06S64995F83	18K ohm
	R306	06S64995F83	18K ohm
	R309	06S64995F77	10K ohm
	R310	06S64995F77	10K ohm
	R501	06S64996F26	1M ohm
	R502	06S64995F93	47K ohm
	R503	06S64995F93	47K ohm
	R505	06S64995F69	4.7K ohm
	R506	06S64996F02	100K ohm
	R507	06S64995F69	4.7K ohm
	R508	06S53330F69	4.7K ohm 1/8W
	R510	06S64995F93	47K ohm
	R511	06S64995F93	47K ohm
	R516	06S64996F02	100K ohm
	R601	06S64995F73	6.8K ohm
	R602	06S64995F69	4.7K ohm
	R603	06S64995F69	4.7K ohm
	R604	06S64996F02	100K ohm
	R605	06S64996F02	100K ohm
	R606	06S64996F02	100K ohm
	R607	06S64996F02	100K ohm
	R608	06S64995F75	8.2K ohm
	R609	06S64995F75	8.2K ohm
	R616	06S64995F77	10K ohm
	R617	06S64995F61	2.2K ohm
	R618	06S64995F85	22K ohm
	R630	06S64995F77	10K ohm
	R631	06S64996F02	100K ohm
	R632	06T70072F61	2.2K ohm 1/4W
	R633	06T70072F53	1K ohm 1/4W
	R634	06T70072F05	10 ohm 1/4W
	R637	06S64995F65	3.3K ohm
	R638	06S64996F18	470K ohm
	R639	06S64995F93	47K ohm
	R640	06S64995F85	22K ohm
	R641	06S64995F61	2.2K ohm
	R642	06S64995F77	10K ohm
	R643	06S64995F85	22K ohm
	R701	06S64996F20	560K ohm
	R702	06S64996F26	1M ohm
	R703	06S64995F77	10K ohm
	R704	06S64995F77	10K ohm
	R705	06S64995F77	10K ohm
	R708	06S64995F51	820 ohm
△	R709	06S64995F91	39K ohm
△	R710	06S64996F04	120K ohm

Notes : ○ : Serial Number between No.10718001B and No.10920500B Model Only,
△ : Serial Number after No.11021001M Model Only, Others : Common.

Symbol No.	Part No.	Description
△ R711	06S64995F21	47 ohm
△ R712	06S64996F02	100K ohm
△ R713	06S64996F02	100K ohm
△ R714	06S64995F75	8.2K ohm
R801	06T70072F29	100 ohm 1/4W
R802	06T70072F47	560 ohm 1/4W
R803	06T70072F47	560 ohm 1/4W
R804	06S64995F63	2.7K ohm
R805	06S64995F82	16K ohm
R810	06T70072F33	150 ohm 1/4W
R822	06S64996F02	100K ohm
R823	06S64995F77	10K ohm
R824	06S64995F77	10K ohm
R825	06S64995F65	3.3K ohm
R826	06S64996F02	100K ohm
R827	06T70072F61	2.2K ohm 1/4W
R828	06S64995F93	47K ohm
R829	06T70072F53	1K ohm 1/4W
VR002	18T45040F11	Variable, 4.7K ohm
VR003	18T42748F09	Variable, 2.2K ohm
VR004	18T45040F14	Variable, 15K ohm
VR005	18T42748F15	Variable, 22K ohm
VR101	18T15805W20	Volume, Metal 150K ohm
VR102	18T10024W14	Variable, 15K ohm
VR103	18T10024W09	Variable, 2.2K ohm
VR201 S601	18T15283W03	Volume, Rotary (VOLUME / TREBLE / BASS / FADER / POWER SWITCH)
VR202	18T25095W03	Volume, Metal 470 ohm

Front P. C. Board

IC's

Symbol No.	Part No.	Description
IC251	51T25576W04	NJM4580E
IC401	51T25797W01	μPD7228AG
IC402	51T15268W06	L78LR05GFA

Transistors

Symbol No.	Part No.	Description
Q401	48T62967F03	CP., DTC124K
Q402	48T94606F03	CP., DTC124EU
Q403	48T62967F03	CP., DTC124K
Q404	48T73023F01	2SD874A

Diode / Thermistor

Symbol No.	Part No.	Description
ZD401	48T62934F38	Zener, CP. RD9.1HB3
TH401	48T93439F03	Thermistor, 10K ohm

Lamps

Symbol No.	Part No.	Description
PL401	65T95083F01	Pilot, 6.7V-85mA
PL402	65T25170W06	6V-70mA
PL403	65T25170W06	6V-70mA
PL404	65T25170W06	6V-70mA
PL405	65T25170W06	6V-70mA

LED's

Symbol No.	Part No.	Description
LD401	48T16167W02	MBG4868K (GRN)
LD402	48T16167W02	MBG4868K (GRN)
LD403	48T16167W02	MBG4868K (GRN)
LD404	48T16167W02	MBG4868K (GRN)
LD405	48T16167W02	MBG4868K (GRN)
LD406	48T16167W02	MBG4868K (GRN)

Switches

Symbol No.	Part No.	Description
S401	40T10876W12	Tact, SKHLAJ (⏭ · UP)
S402	40T10876W12	Tact, SKHLAJ (TUNE)
S403	40T10876W12	Tact, SKHLAJ (A.P.I.)
S404	40T10876W12	Tact, SKHLAJ (T.INFO)
S405	40T10876W12	Tact, SKHLAJ (DX)
S406	40T10876W12	Tact, SKHLAJ (D.A.P.)
S407	40T10876W12	Tact, SKHLAJ (TUNER · BAND)
S408	40T10876W12	Tact, SKHLAJ (EJECT)
S409	40T10876W12	Tact, SKHLAJ (⏮ · DN)
S410	40T10876W12	Tact, SKHLAJ (M1 / CLEAR)
S411	40T10876W12	Tact, SKHLAJ (M2 / P.T.M.)
S412	40T10876W12	Tact, SKHLAJ (M3 / O.T.M.)
S413	40T10876W12	Tact, SKHLAJ (M4 / M.I.X.)
S414	40T10876W12	Tact, SKHLAJ (M5 / REPEAT)
S415	40T10876W12	Tact, SKHLAJ (M6 / SCAN)
S416	40T10876W12	Tact, SKHLAJ (DISC ▶ / II)
S417	40T10876W12	Tact, SKHLAJ (RESET)

Notes : ○ : Serial Number between No.10718001B and No.10920500B Model Only,
△ : Serial Number after No.11021001M Model Only, Others : Common.

Capacitors

Symbol No.	Part No.	Description
C251	08T90316F15	TF, 6800pF
E251	23S61523F12	ELY., 10µF / 16V
C252	08T90316F15	TF, 6800pF
C253	08S82122F37	CP., 100pF
C254	08S82122F37	CP., 100pF
C255	08S82122F21	CP., 22pF
C256	08S82122F21	CP., 22pF
C257	08T90316F22	TF, 0.027µF
C258	08T90316F22	TF, 0.027µF
C401	08T81833F03	CP., 1µF
C402	08T81833F03	CP., 1µF
C404	08S65128F69	CP., 0.01µF
C405	08S65128F69	CP., 0.01µF
C406	08S65128F69	CP., 0.01µF
C407	08S65128F69	CP., 0.01µF
C408	08S65128F69	CP., 0.01µF
C409	08S65128F69	CP., 0.01µF

Resistors (All resistors are chip 1/10W ± 5% unless otherwise noted.)

Symbol No.	Part No.	Description
R251	06S64995F53	1K ohm
R252	06S64995F53	1K ohm
R253	06S64995F77	10K ohm
R254	06S64995F77	10K ohm
R255	06S64995F77	10K ohm
R256	06S64995F77	10K ohm
R257	06S64996F26	1M ohm
R258	06S64996F26	1M ohm
R259	06S64995F53	1K ohm
R260	06S64995F53	1K ohm
R401	06T70072F17	33 ohm 1/4W
R403	06S64995F77	10K ohm
R404	06S64995F77	10K ohm
R405	06S64995F77	10K ohm
R406	06S64995F77	10K ohm
R407	06S64995F77	10K ohm
R408	06S64995F99	82K ohm
R409	06T70072F17	33 ohm 1/4W
R410	06T70072F15	27 ohm 1/4W
R411	06T70072F41	330 ohm 1/4W
R412	06T70072F41	330 ohm 1/4W
R413	06T70072F14	24 ohm 1/4W
R414	06T70072F23	56 ohm 1/4W
R415	06S53330F89	33K ohm 1/8W
R416	06S64995F77	10K ohm

Symbol No.	Part No.	Description
R417	06S64995F71	5.6K ohm
R418	06S64995F65	3.3K ohm
R419	06S64995F61	2.2K ohm
R420	06S64995F57	1.5K ohm
R421	06S64995F55	1.2K ohm
R422	06S64995F89	33K ohm
R423	06S64995F77	10K ohm
R424	06S64995F71	5.6K ohm
R425	06S64995F65	3.3K ohm
R426	06S64995F61	2.2K ohm
R427	06S64995F57	1.5K ohm
R428	06S64995F55	1.2K ohm
R429	06S64995F77	10K ohm
R430	06T70072F23	56 ohm 1/4W
R432	06T70072F43	390 ohm 1/4W
R435	06T70072F37	220 ohm 1/4W
VR251 LD251	18T16435W01	Volume, Slide 100K ohm (BASS / LED : GRN)
VR252 LD252	18T16435W01	Volume, Slide 100K ohm (TREB / LED : GRN)

Audio / Regulator P. C. Board

IC's

Symbol No.	Part No.	Description
IC203	51T25154W01	BA15532F
IC204	51T92001F01	BA4560F
or	51T93338F01	NJM4560E
IC603	51T92166F02	S-8054ALO
IC803	51T90890F01	M5236ML

Transistors

Symbol No.	Part No.	Description
Q203	48T62967F33	CP., DTC343T
Q204	48T62967F33	CP., DTC343T
Q604	48T94606F53	CP., DTA124EU
Q605	48T63417F01	CP., 2SC2412K
Q608	48T83415F03	2SD1858
Q804	48T84238F03	2SB1240
Q805	48T84238F03	2SB1240
Q806	48T94606F53	CP., DTA124EU
Q812	48T94581F01	CP., 2SA1576
Q813	48T62967F03	CP., DTC124K
Q814	48T80611F01	CP., 2SB1132
Q815	48T80611F01	CP., 2SB1132
Q816	48T94606F03	CP., DTC124EU
Q817	48T94606F03	CP., DTC124EU
Q818	48T94606F03	CP., DTC124EU

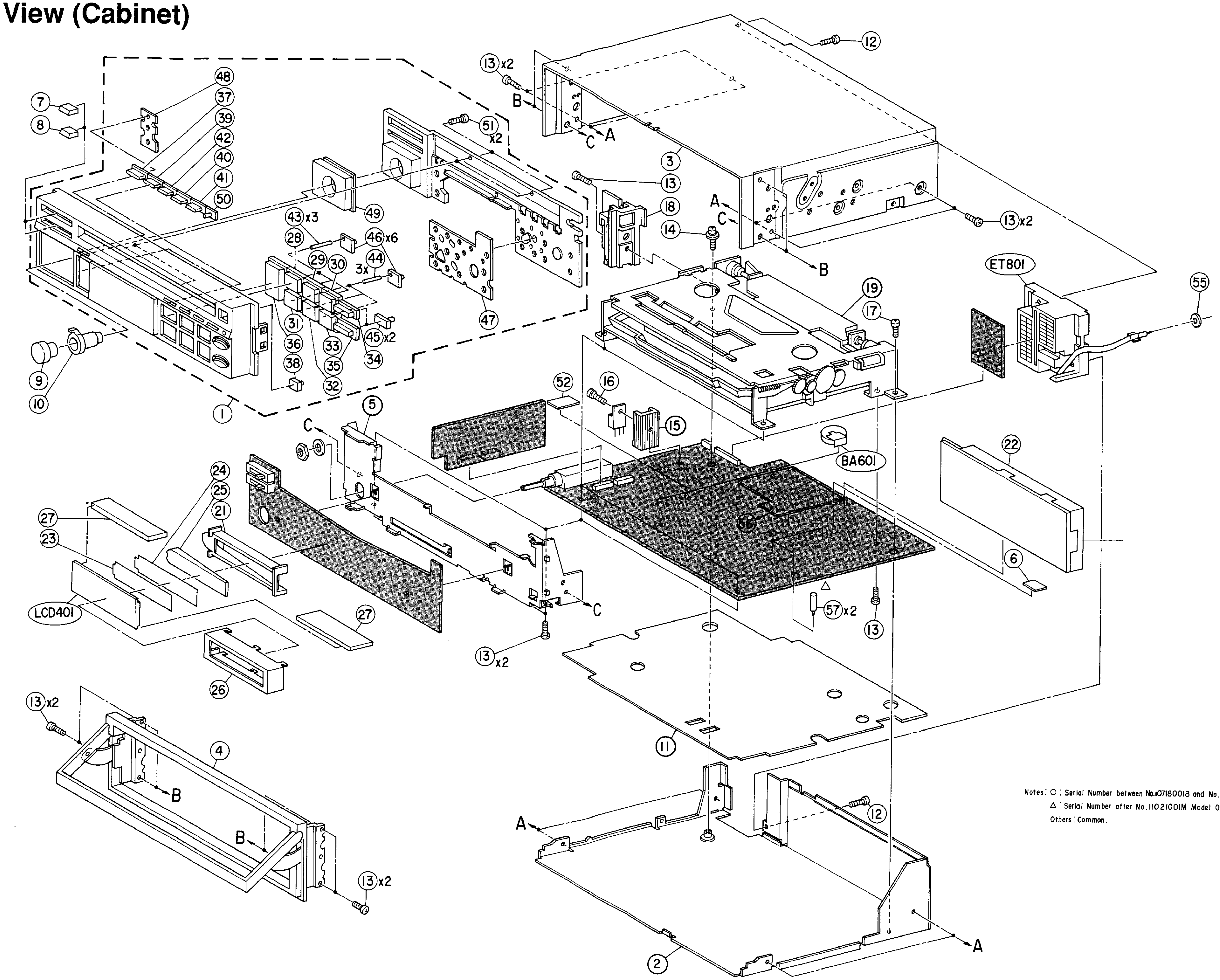
Symbol No.	Part No.	Description
Q819	48T94606F53	CP., DTA124EU
Q820	48T63420F01	CP., 2SA1037K
Q821	48T94606F03	CP., DTC124EU
Q822	48T94606F03	CP., DTC124EU
Diodes		
D603	48T52446F01	CP., MA151WK
D612	48T68828F11	1SS133
D805	48T94608F01	CP., DA204U
D806	48T15512W01	CP., DSM10
D807	48T94608F03	CP., DAN202U
D808	48T94608F03	CP., DAN202U
D809	48T94608F03	CP., DAN202U
D810	48T94608F03	CP., DAN202U
ZD601	48T62934F22	Zener, CP. RD5.6MB2
ZD602	48T25766W09	Zener, HZS6C3L
ZD805	48T62934F40	Zener, CP. RD10MB2
Capacitors		
E203	23T00180L25	ELY., 10µF / 50V
E204	23T00180L25	ELY., 10µF / 50V
E205	23T25149W09	ELY., 10µF / 16V
E206	23T25149W12	ELY., 47µF / 16V
E207	23S61523F12	ELY., 10µF / 16V
E210	23T25149W09	ELY., 10µF / 16V
E211	23T25149W12	ELY., 47µF / 16V
C601	08S65128F69	CP., 0.01µF
E603	23S61523F29	ELY., 1µF / 50V
E604	23S61523F12	ELY., 10µF / 16V
E608	23S16086W02	ELY., 330µF / 6.3V
C803	08S65128F76	CP., 0.1µF
C805	08S65128F69	CP., 0.01µF
E806	23T25149W13	ELY., 100µF / 10V
E814	23S61523F12	ELY., 10µF / 16V
E815	23S61523F28	ELY., 0.47µF / 50V
E816	23S61523F12	ELY., 10µF / 16V
E817	23S61523F12	ELY., 10µF / 16V

Symbol No.	Part No.	Description
Resistors (All resistors are chip 1/10W ± 5% unless otherwise noted.)		
R208	06S64995F77	10K ohm
R209	06S64995F85	22K ohm
R210	06S64995F85	22K ohm
R211	06S64995F77	10K ohm
R212	06S64995F77	10K ohm
R213	06S64995F91	39K ohm
R214	06S64995F91	39K ohm
R215	06S64995F37	220 ohm
R216	06S64995F37	220 ohm
R217	06S64995F53	1K ohm
R218	06S64995F53	1K ohm
R219	06S64995F53	1K ohm
R220	06S64995F53	1K ohm
R221	06S64995F85	22K ohm
R222	06S64995F85	22K ohm
R230	06S64995F77	10K ohm
R231	06S64995F85	22K ohm
R232	06S64995F85	22K ohm
R612	06S64995F77	10K ohm
R613	06T70072F65	3.3K ohm 1/4W
R614	06S64995F93	47K ohm
R615	06T70072F77	10K ohm 1/4W
R635	06S64995F77	10K ohm
R636	06S64995F99	82K ohm
R806	06T70072F37	220 ohm 1/4W
R807	06S64995F81	15K ohm
R808	06S64995F87	27K ohm
R809	06S64995F69	4.7K ohm
R811	06T70072F04	8.2 ohm 1/4W
R812	06T70072F04	8.2 ohm 1/4W
R813	06S64995F77	10K ohm
R814	06S64995F61	2.2K ohm
R815	06S64995F77	10K ohm
R816	06S64995F77	10K ohm
R817	06S64995F77	10K ohm
R818	06T70072F61	2.2K ohm 1/4W
R819	06S64995F85	22K ohm
R820	06T70072F69	4.7K ohm 1/4W
R821	06T70072F77	10K ohm 1/4W
R831	06S64995F77	10K ohm
R832	06S64995F77	10K ohm
R833	06S64995F61	2.2K ohm
R834	06S64996F10	220K ohm

Symbol No.	Part No.	Description
QRB P. C. Board		
Capacitors		
C607	08S65128F69	CP., 0.01µF
C808	08S40805F19	CER., 0.01µF
C809	08S40805F19	CER., 0.01µF
Resistor		
R629	06T70072F77	CP., 10K ohm 1/4W
Load / Photo P. C. Board		
IC / Transistors		
IC311	51T15267W01	IC, LB1641
PT301	48T92913F01	Photo, PT360
PT302	48T92913F01	Photo, PT360
PT303	48T92913F01	Photo, PT360
Diode / LED's		
ZD301	48T15440W12	Zener, UTZJ6.2C
LD301	48T16057W02	LED, AN501-B1 (RED)
LD302	48T16057W02	LED, AN501-B1 (RED)
LD303	48T16057W02	LED, AN501-B1 (RED)
Capacitors		
C311	08S65128F69	CP., 0.01 µF
C312	08S65128F69	CP., 0.01 µF

Symbol No.	Part No.	Description
Resistors (All resistors are chip 1/8W ± 5% unless otherwise noted.)		
R311	06S53330F43	390 ohm
R312	06S53330F47	560 ohm
R313	06S53331F02	100K ohm
R314	06S53331F02	100K ohm
R315	06S53331F02	100K ohm
R316	06T70072F01	4.7 ohm 1/4W
R317	06T70072F01	4.7 ohm 1/4W
R318	06S53330F47	560 ohm
R319	06S53331F02	100K ohm
Miscellaneous		
ET801	01T25803W06	QRB Socket
BA601	60T15855W01	Battery, LIT. CR2450
LCD401	65T25960W01	LCD Display
HD201	88T15309W01	Pick Up Unit
M301	01V13100W97	Assy., Loading Motor (6V-210mA)
M302	59T91005F01	Motor, Spindle (2V-90mA)
M303	59T52973F03	Motor, Sled (6V-210mA)
S301	40T71025F03	Switch, Detector (CAM END)
S302	40T71025F01	Switch, Detector (LIMIT)
PT304	48T92913F01	Transistor, Photo PT360
LD304	48T16057W02	LED, AN501-B1 (RED)
SD301	01A90816F01	Assy., Clamp Solenoid

Exploded View (Cabinet)


1
2
3
4
5
⑬x2
⑫
B
C
A
③
⑬
⑱
A
C
⑭
B
⑬x2
ET801
(55)
⑦
⑧
(48)
(37)
(39)
(42)
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(50)
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⑩
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⑯
⑮
BA601
C
⑤
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LCD401
㉗
(26)
C
⑬x2
(56)
㉒
⑥
(57)x2
⑬
⑬x2
④
B
B
⑬x2
⑪
A
⑫
②
A
A
B
C
D
E
F
G
H

Notes: ○ : Serial Number between No.107180018 and No.10920500B Model Only,
△ : Serial Number after No.11021001M Model Only,
Others : Common.

Cabinet Assembly Parts List

NOTE : The parts without part list are not supplied.

Symbol No.	Index	Part No.	Description
1	3-C	13D21690W04	Assy., Nosepiece
3	1-E	15C21584W04	Cover, Top
4	4-C	07C21606W01	Assy., Bracket Handle
6	3-G	14S94461F03	Insulator, Cover
7	1-B	36B13674W01	Knob, Slide
8	1-B	36B13674W02	Knob, Slide (B)
9	3-B	36A94114F01	Knob, Control (FRONT)
10	3-B	36A94115F01	Knob, Control (BACK)
12		03S52360F78	Screw, Pan (M2.6×8)
13		03S44205G34	Screw, Pan (M2.6×5)
14	2-E	03D40121T43	Screw, W/Double Washer (M2.6×6)
16	3-E	03D40121T06	Screw, W/Double Washer (M2.6×8)
17	2-F	03S44205G29	Screw, Pan (M2.6×6)
18	2-E	15B22125W01	Cover, P.C.Board
21	3-C	15B30048W01	Case, LCD
22	3-G	77C30794W01	FM/MW/LW Tuner Unit MB4R901B (FE001)
23	3-B	26A30047W01	Reflector, Sheet
24	3-C	26A30047W02	Reflector, Sheet
25	3-C	61A21582W01	Lens, LCD
26	4-C	07A30046W01	Bracket, Shield
27		75T35021W02	Rubber, Electric
28	2-C	36C21613W09	Knob, Preset 1/CLEAR
29	2-C	36C21613W10	Knob, Preset 2/P.T.M.
30	2-C	36C21613W11	Knob, Preset 3/O.T.M.
31	2-C	36C21613W12	Knob, Preset 4/M.I.X.
32	3-C	36C21613W13	Knob, Preset 5/REPEAT
33	2-C	36C21613W14	Knob, Preset 6/SCAN
34	2-C	36C21572W01	Knob, Push TUNER
35	3-C	36C21572W03	Knob, Push DISC
36	2-C	36C21569W04	Knob, UP/DN
37	1-C	36B21574W03	Knob, TUNE
38	3-C	36A13658W01	Knob, EJECT
39	1-C	36B21695W03	Knob, A.P.I.
40	1-C	36B21696W02	Knob, DX
41	2-C	36B21697W01	Knob, D.A.P.
42	1-C	36B21696W03	Knob, T.INFO
43	2-C	61A11530W03	Lens, Indicator
44	2-C	61A11530W01	Lens, Indicator
45	2-C	36A21573W01	Knob, Push Base
46	2-C	36A21614W01	Knob, Preset Base
47	2-D	75B21698W01	Cushion, Knob
48	1-C	75B21698W02	Cushion, Knob
49	2-C	15B21694W03	Cover, Volume
50	2-C	13D21691W02	Nose, Reset
51	1-D	03S68555F07	Screw, Pan (M2×4)
52	3-D	14A38062W01	Insulator, Cover
55	2-G	04B41345P11	Washer, Lock (M1.2)
56	3-E	84T35430W01	Flexible, Panel
△ 57	4-F	09T84840F02	Lug, Style

Notes : ○ : Serial Number between No.10718001B and No.10920500B Model Only,
△ : Serial Number after No.11021001M Model Only, Others : Common.

Packing Assembly Parts List

Symbol No.	Part No.	Description
101	56S22119W68	Carton, Packing (Individual)
102	56D22122W01	Tray, Packing (L)
103	56D22122W02	Tray, Packing (R)
104	01V31400W91	Assy., Kit
104-1	02B47353F01	Nut, Hex. (M5)
104-2	03S40012G66	Screw, Tapping (M5 x 20)
104-3	03B44963F03	Bolt, Hex. W/Washer (M5 x 10)
104-4	03A40155F05	Bolt, Hex. (M5 x 14)
104-5	03A40155F01	Bolt, Hex. (M5 x 8)
104-6	03A84814F04	Screw, Special (M2.6 x 18)
104-7	45A41684U01	Arm, Adapter
104-8	07A30081W01	Bracket, QRB (A)
104-9	07A30082W01	Bracket, QRB (B)
104-10	03S44205G34	Screw, Pan (M2.6 x 5)
105	68P21910W67	Owner's, Manual
106	56C40990T36	Sack, Polyethylene
107	07B64552F01	Bracket, Strap Receiver
108-1	15D21598W01	Case, Mother
108-2	03A28015W01	Screw, Special (M2.6 x 6.7)
108-3	01T35620W09	Assy., QRB Connector (With 3A Fuse, For BATT Line)
109	01T96095F08	Assy., Connector (4P)

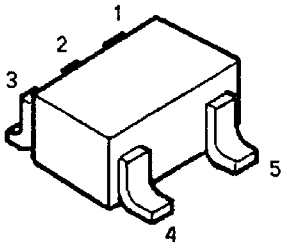
Packing Method View

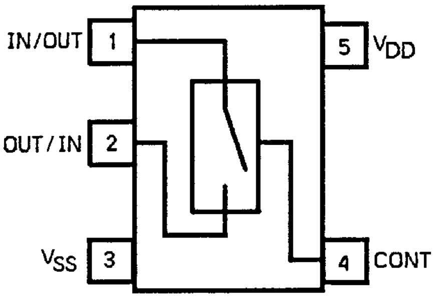
For Packing Method View of this Service Manual, refer to the Service Manual 7906R (68P31588W02).

Semi - Conductor Lead Identifications

Note : The parts is not mentioned, refer to the Service Manual 7906R (68P31588W02).

TC4S66F : IC206




IN/OUT
1
OUT/IN
2
VSS
3
5
VDD
4
CONT

ALPINE ELECTRONICS INC.
Tokyo Office : 1-1-8 Nishi Gotanda.
Shinagawa-ku, Tokyo, Japan 141
Phone 03-3494-1101 Telex 8927-61

ALPINE ELECTRONICS OF AMERICA, INC.
19145 Gramercy Place
Torrance, California 90501
Phone 310-326-8000

ALPINE ELECTRONICS OF CANADA, INC.
605 Alden RD Markham,
Ontario L3R 3L5 Canada
Phone 416-475-7280 Telex 06-986789

ALPINE ELECTRONICS GmbH
Brandenburger Str. 2-4,
4030 Ratingen F.R. Germany
Phone 001-49-2102-4550 Telex 8589157
Fax 001-49-2102-445321

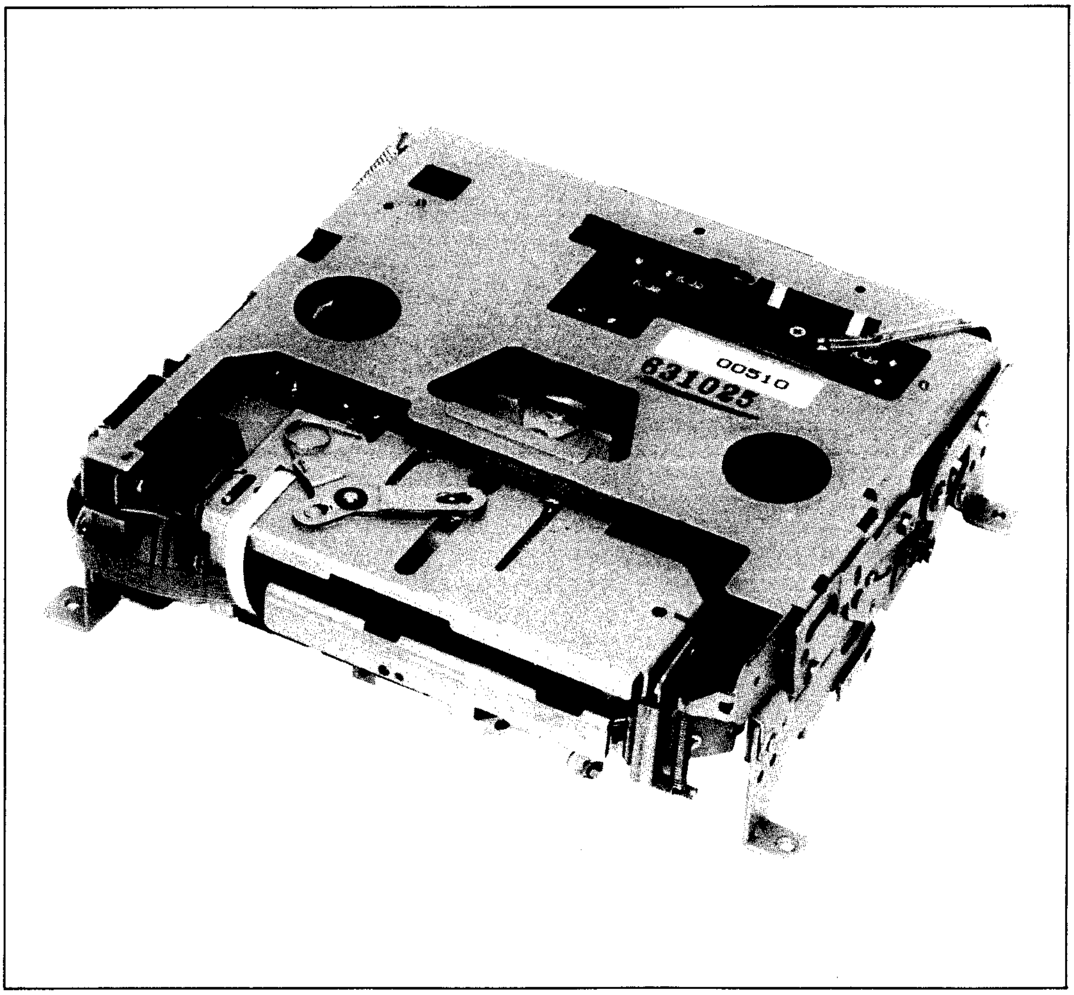
12 . 91-S
68P31588W03
Printed in Japan

ALPINE SERVICE MANUAL

'15280

CD Player Mechanism

ADDENDUM & REVISED (III)


00510
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DP-S SERIES

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Mechanism Function Description

Function	Step	Description	Illustration
LOADING (of a 12cm CD)	①	The beam to the photo sensor (A) will be broken when a disc is inserted into the loading position.	Figure 1
	②	The mechanism detects the disc insertion and actuates the Loading motor to rotate. The rotation of motor is transmitted to the drive roller through gears (E), (D), (B) and (A).	Figure 2 Figure 7
	③	The disc will be pinched between the drive roller and the upper guide and pulled into the mechanism.	Figure 7
	④	The disc reaches to the sensor gate mechanism. The beam to the photo sensor (D) is broken, and simultaneously the micro-processor discriminates 12 or 8cm CD size depending on the photo sensor (B). If the beam to the photo sensor (B) is broken, the micro-processor detects that the disc is a 12cm CD and it continues feeding the disc.	Figure 3

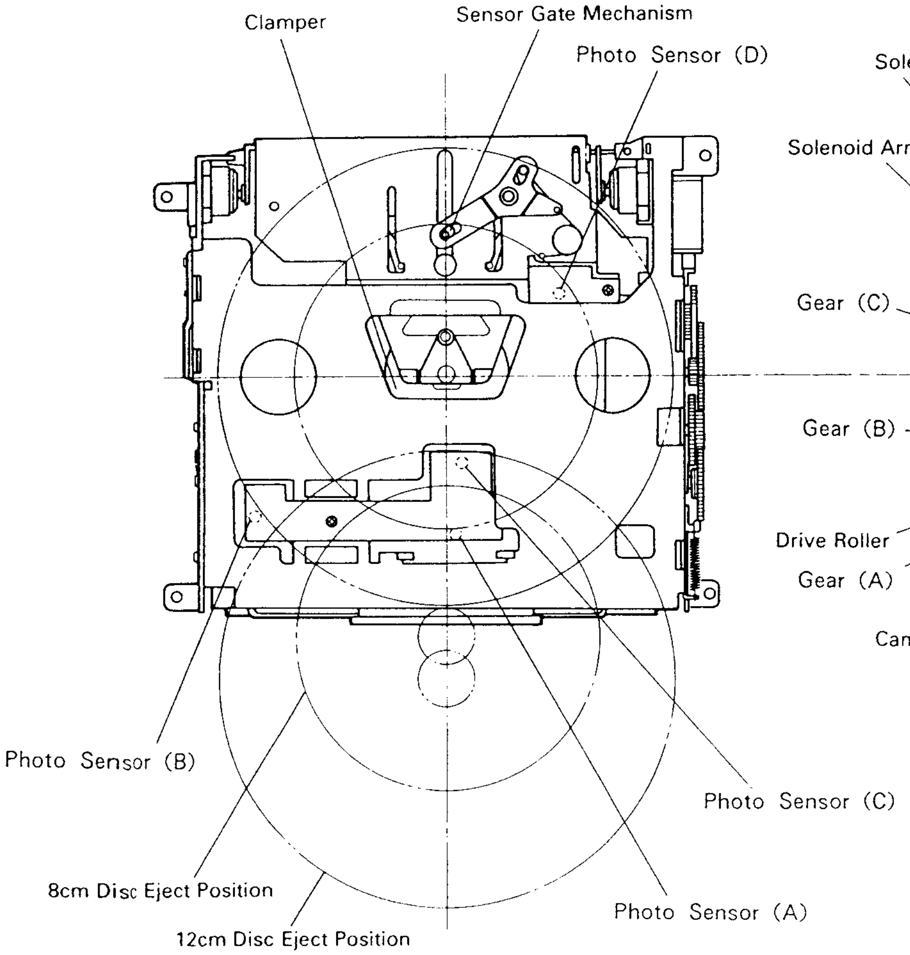

Clamper
Sensor Gate Mechanism
Photo Sensor (D)
Photo Sensor (B)
Photo Sensor (C)
8cm Disc Eject Position
12cm Disc Eject Position
Photo Sensor (A)

Figure 1

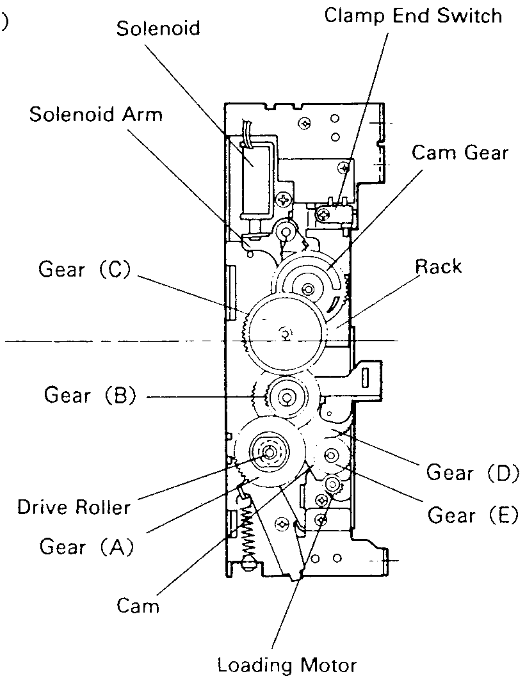

Solenoid
Clamp End Switch
Solenoid Arm
Cam Gear
Gear (C)
Rack
Gear (B)
Gear (D)
Drive Roller
Gear (E)
Gear (A)
Cam
Loading Motor

Figure 2

Function	Step	Description	Illustration
LOADING (of a 12cm CD)	⑤	The disc touches the left and right stopper pins, and push them by the feed mechanism. By pushing the stopper pins, the left and right lock levers rotate and the lock pins remove from the lock position of the guide holes.	Figure 3
	⑥	The disc touches the disc stopper and moves the unlocked sensor gate to the outer direction by the feed mechanism.	Figure 4
	⑦	If the disc reaches to the end position, the beam reaches to the photo sensor (B).	Figure 4
	⑧	The mechanism detects that the disc is pulled into the chucking position and starts chucking action.	Figure 4

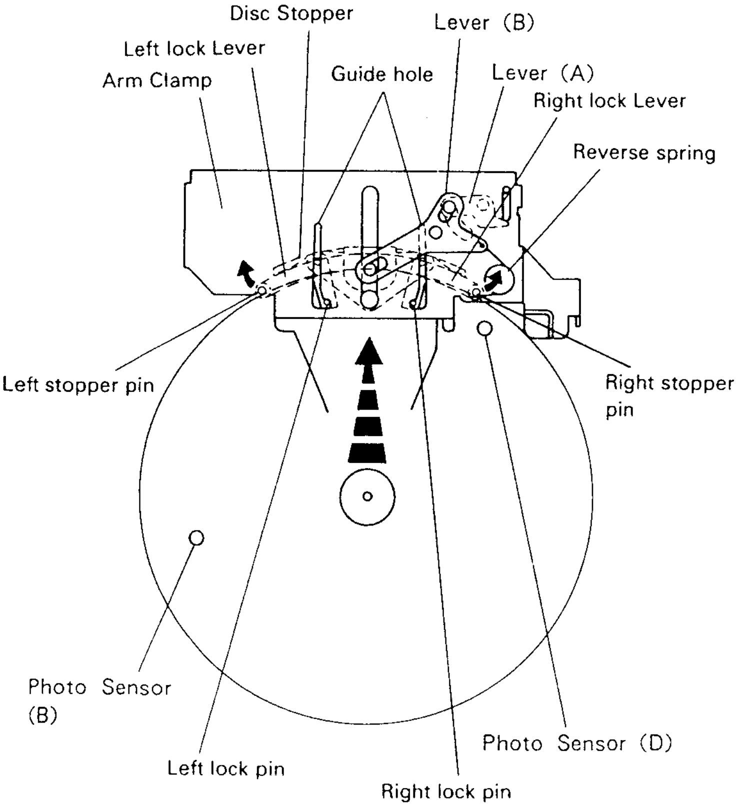

Disc Stopper
Lever (B)
Left lock Lever
Arm Clamp
Guide hole
Lever (A)
Right lock Lever
Reverse spring
Left stopper pin
Right stopper pin
Photo Sensor (B)
Left lock pin
Photo Sensor (D)
Right lock pin

Figure 3

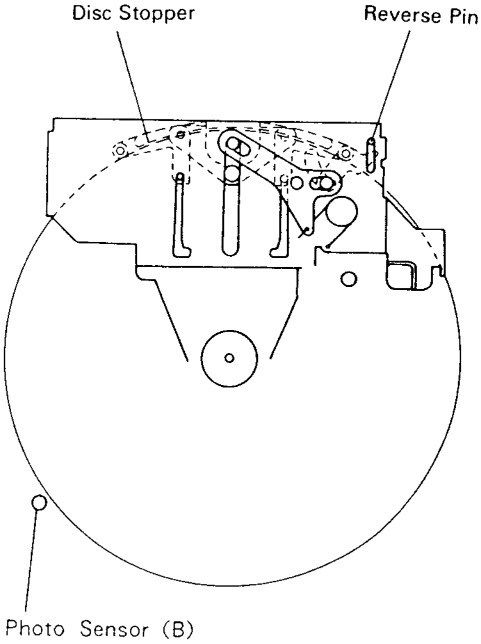
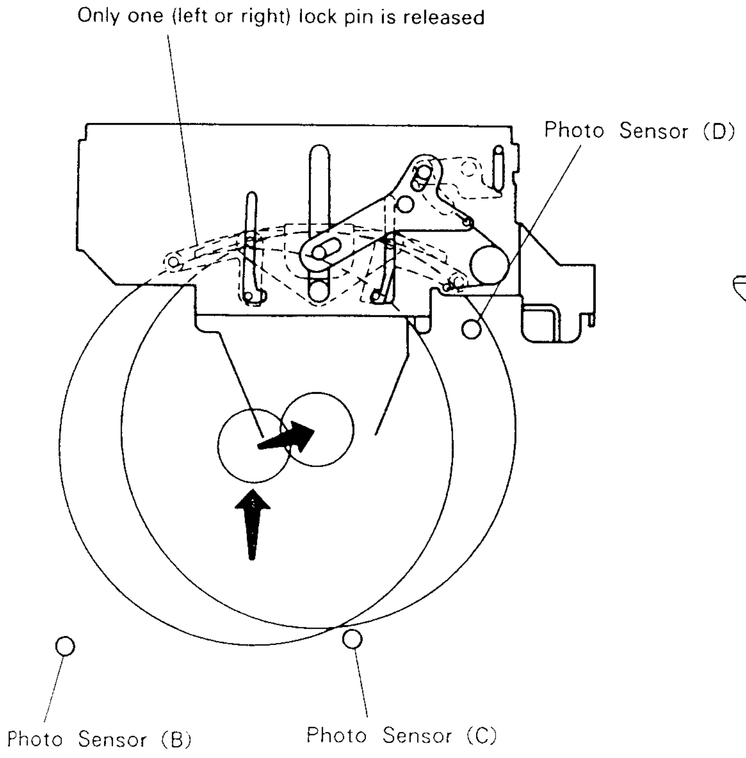

Disc Stopper
Reverse Pin
Photo Sensor (B)

Figure 4

Function	Step	Description	Illustration
LOADING (of a 8cm CD)	① ② ③	The same process as 12cm CD loading operation steps①~③.	Figure 1 Figure 2 Figure 7
	④	The disc reaches to the sensor gate mechanism. The sensor gate mechanism moves depending on the disc insertion position at the disc slot as follows. A) When the disc is inserted at the center of the slot. The disc touches to the disc stopper. The disc cannot push both the left and right stopper pins, so that the locking pins cannot be released. The disc movement stops there. B) When the disc is inserted at the deviated position to the left or right from the center of the slot. First, the disc pushes the left or right stopper pin. The disc cannot push the another stopper pin, so that the locking pins cannot be released. The disc moves by the shape of the disc stopper to the center position and stops.	Figure 5
	⑤	If the beam reaches to the photo sensor (B) and (C) when the beam to the photo sensor (D) is broken by the disc, the mechanism discriminates that the 8cm CD is in the chucking position, and starts chucking action.	Figure 5



When a disc is inserted at the left from the center of the slot.

Figure 5

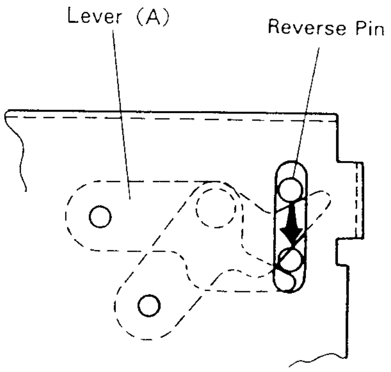


Figure 6

Function	Step	Description	Illustration
CHUCKING	①	The mechanism detects that the disc is pulled into the Chucking position and pulls the solenoid.	Figure 8
	②	The solenoid arm connected with the solenoid starts to rotate and transmits the rotation to the cam gear.	Figure 8
	③	The cam gear starts to rotate and engages with the gear (C) then the driving power of the Loading motor will be transmitted to the cam gear.	Figure 8
	④	The rotating cam gear engages with rack, and moves the rack toward the right.	Figure 8
	⑤	With the movement of the rack, the following functions will be performed simultaneously. A. The clamper moves downward and chucks the disc. B. The drive roller moves downward and releases the disc pinched previously and moves the disc downward. C. Releases the locking on the pickup block and places the unit in the floating status.	Figure 8 Figure 9 Figure 10
	⑥	The rack slides to the right end and releases the engagements between the gear (C) and the cam gear as well as the cam gear and rack, and turns the clamp end switch on.	Figure 8
	⑦	The mechanism detects that the clamp operation has finished, and the Loading motor stops rotating.	Figure 8

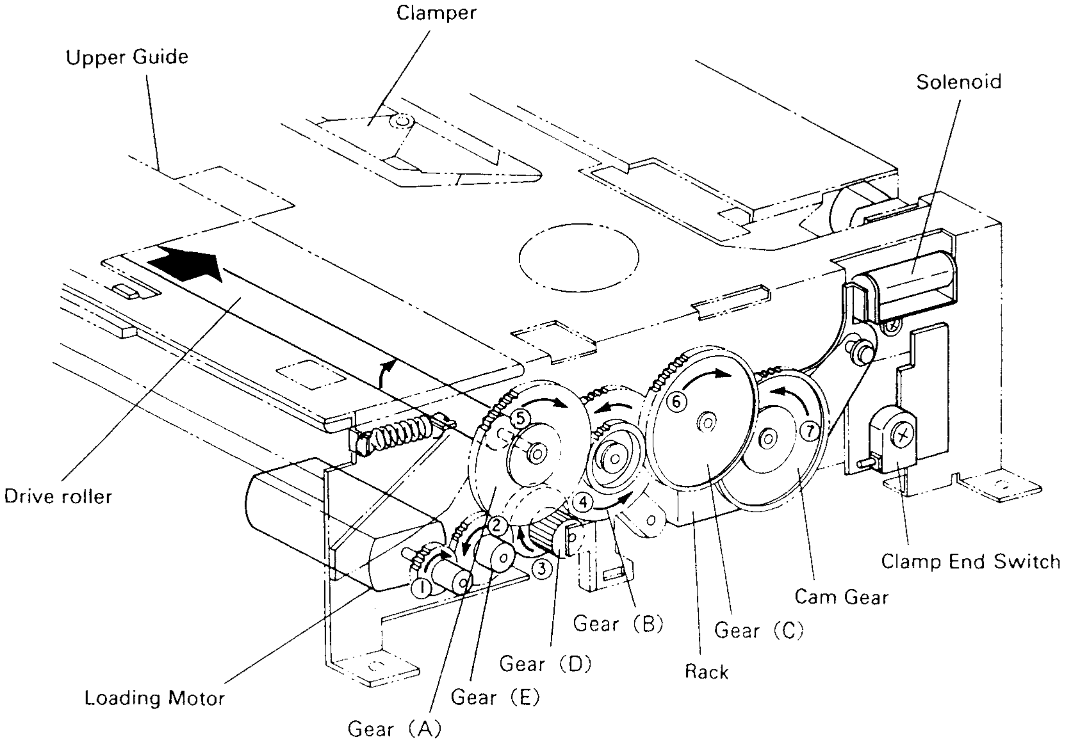


Figure 7

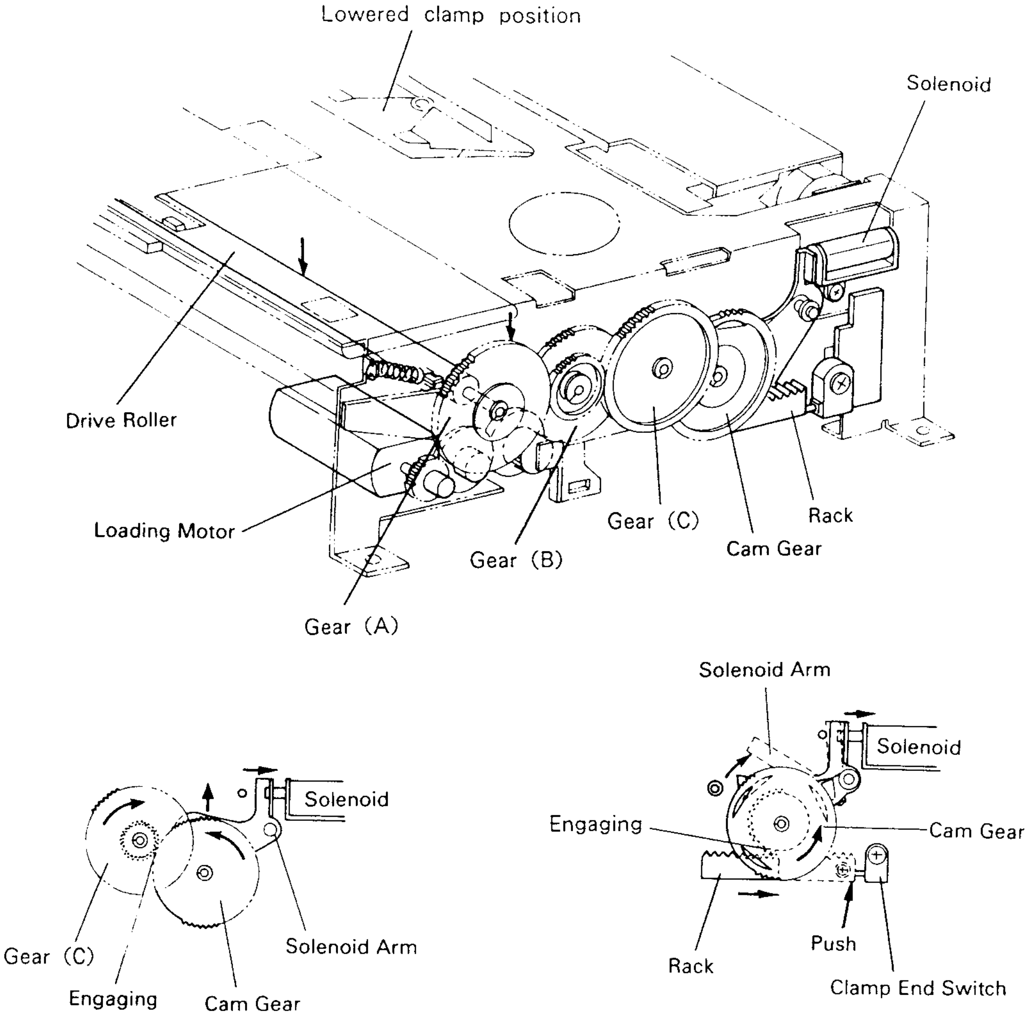

Lowered clamp position
Solenoid
Drive Roller
Loading Motor
Gear (C)
Rack
Cam Gear
Gear (B)
Gear (A)
Solenoid Arm
Solenoid
Engaging
Cam Gear
Rack
Push
Clamp End Switch
Solenoid
Gear (C)
Solenoid Arm
Engaging
Cam Gear

Figure 8

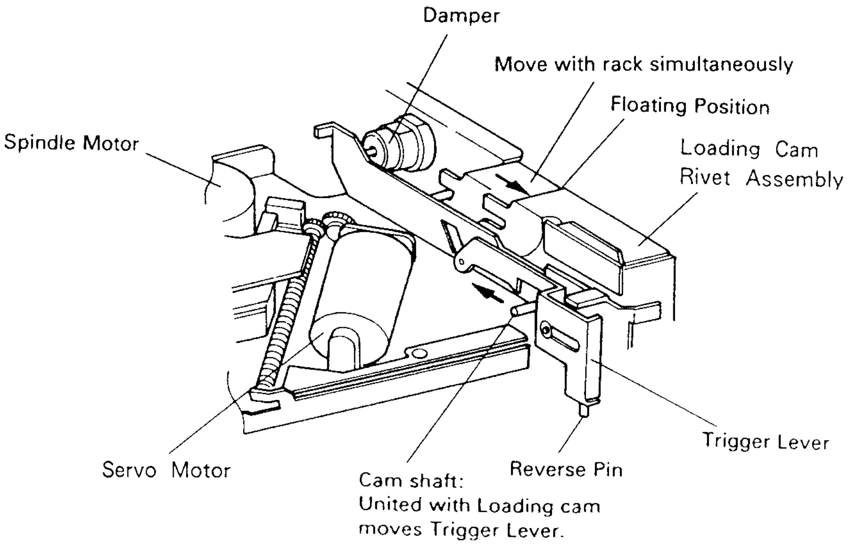

Damper
Move with rack simultaneously
Floating Position
Spindle Motor
Loading Cam
Rivet Assembly
Trigger Lever
Servo Motor
Reverse Pin
Cam shaft:
United with Loading cam
moves Trigger Lever.

Figure 9

Function	Step	Description	Illustration
PLAY	①	The spindle motor rotates the disc.	Figure 10
	②	The rotation of the servo motor is transmitted to the shaft screw through the gear, moves the pickup.	Figure 10
	③	The Inner limit switch detects the lead-in position of the disc, and the mechanism begins to read the information of the disc.	Figure 10

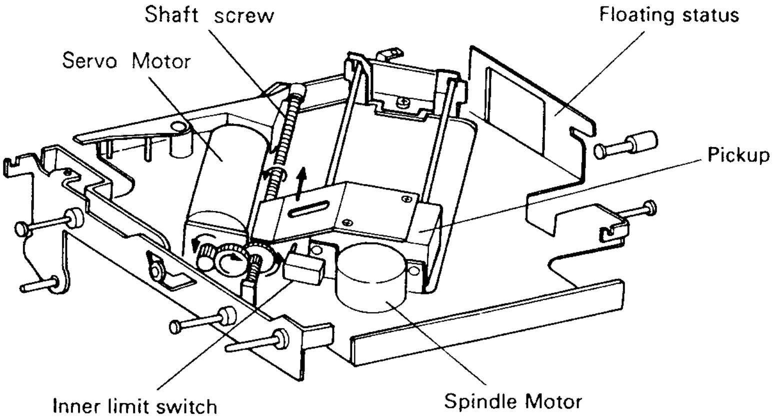


Figure 10

Function	Step	Description
EJECTION (of a 12cm CD)	①	The Loading motor rotates in the reverse direction when loading.
	②	Pulls the solenoid.
	③	The solenoid arm engaged with the solenoid starts rotating and the cam gear engages with the gear (C).
	④	The cam gear rotates and engages with the rack and then moves the rack in the left direction.
	⑤	Engaging with the movement of the rack, the following functions will be performed simultaneously. A. The clamper moves upward and releases the disc. B. The driving roller moves up and lifts the disc, and pinches the disc between it and the upper guide. C. Locks the pickup block. D. The reverse pin moves with engaging the levers (A) and (B), which moves the sensor gate mechanism to the original position.
	⑥	When the rack moves to the left, the engagements between the gear (C) and the cam gear, the cam gear and the rack will be released.

Function	Step	Description
EJECTION (of a 12cm CD)	⑦	The disc which is pinched between the drive roller and the upper guide moves to the outside of the mechanism. When the disc is sent out to the EJECT position, the beam broken by the disc is released and reaches the photo sensor (B).
	⑧	The mechanism detects that the disc has come out to the EJECT position and stops the motor rotation.
	⑨	The mechanism detects that all functions have finished when the disc is pulled out from the mechanism and beam is passed through to the photo sensor (A).
RELOAD (of a 12cm CD)	①	If the disc is not pulled out from the mechanism for 15 seconds after it comes to the EJECT position, the mechanism actuates the Loading function steps ① – ⑧.
EJECTION (of a 8cm CD)	① ② ③ ④	The same process as 12cm CD Eject operation steps ①~④.
	⑤	Engaging with the movement of the rack, the following functions will be performed simultaneously. A. B. ├ The same process as 12cm CD Eject operation step⑤ –A, B, C. C.
	⑥	The same process as 12cm CD Eject operation step ⑥.
	⑦	The disc which is pinched between the drive roller and the upper guide moves to the outside of the mechanism. The disc is released from the drive roller and stops.
	⑧	If the beam reaches the photo sensor (C) after 1.5 seconds from starting ejection, the motor stops.
	⑨	The mechanism detects that all functions have finished, when the disc is pulled out from the mechanism and beam is passed through to the photo sensor (A).

Function	Step	Description
TROUBLE SHOOTING (While Loading a 12cm CD)	①	If the beam to the photo sensor (D) is not broken within 3 seconds after the Loading motor begins rotating as described in the Loading operation step ②, the mechanism takes it as trouble and rotates the Loading motor inversely and pushes the disc out to the EJECT position.
	②	In the Loading step ④, if the beam does not reach the photo sensor (D) within 3 seconds after the beam to the photo sensor (B) is broken, the mechanism take it as trouble and rotates the loading motor inversely and push the disc out to the eject position. If the disc is removed and the beam reaches the photo sensor (A), the mechanism performs loading, chucking and ejection without a disc. (To place the sensor gate mechanism from the END position to the original position the mechanism operates the Ejection step ⑤－d)
	③	When the disc is pulled out during the loading process, the Loading motor rotates inversely and stops the rotating after certain seconds.
(While loading a 8cm CD)	①	The same process as 12cm CD loading operation step①.
	②	The same process as 12cm CD loading operation step③.
(While Chucking)	①	In the chucking operation (step ①) if the Clamp End Switch doesn't turn on within 3 seconds after the solenoid is pulled, the mechanism takes it as trouble and rotates the Loading motor inversely and pushes the disc out and stops at the EJECT position. When the disc doesn't come to the EJECT position, the motor stops the rotating after certain seconds.
(While Playing)	①	After disc chucking, if the mechanism is unable to read the information of the disc for some reason, it actuates the EJECTION operation steps.
(While Ejecting a 12cm CD)	①	If the disc doesn't come to the EJECT position within 5 seconds after the solenoid is pulled in the EJECTION operation step ①, the mechanism takes it as trouble and rotates the Loading motor inversely and performs the Loading operation steps.
(While Ejecting a 8cm CD)	①	If the beam does not reach the photo sensor (C) within 1.5 seconds after starting ejection, the motor continues rotating. If the beam does not reach the photo sensor (C) within 5 seconds after starting ejection, the mechanism takes it as trouble and changes the motor rotating direction and performs loading steps.

Disassembly Instructions

● For DP24A010/DP24A020/ DP24A110/DP24A11A/ DP24A210/DP24A220 models

1. Removal of the Load/Photo P. C. Boards

(1) Remove three screws marked with "○" as shown in Figures 11 and 12.

(2) Remove the solder (c) as shown in Figure 11.

2. Removal of the LED P. C. Board

(1) Remove the solder (b) as shown in Figure 12.

(2) Remove the screw marked with "▲" as shown in Figure 12.

3. Removal of the End Switch (A) P. C. Board

(1) Remove the two screws marked with "●" as shown in Figure 13.

(2) Remove the two lead wires from the solenoid.

4. Removal of the Pick-Up Unit

(1) Remove the cam gear and the gear (C) as shown in Figure 13.

(2) Remove the four screws marked with "※" as shown Figures 13 and 14.

(3) Both the Pick-Up Unit and Rivet Loading Bracket Assembly will be removed.

Note :The cam gear and gear (C) are mounted with washers. Do not lose the washers, keep them carefully.

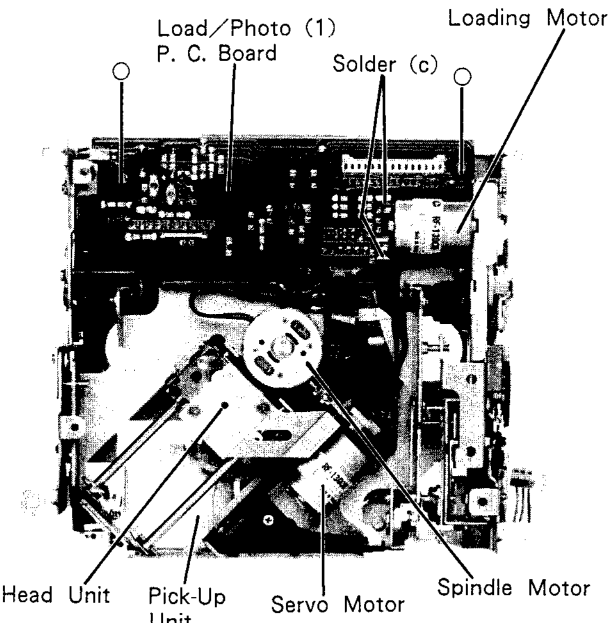

Load/Photo (1) P. C. Board
Loading Motor
Solder (c)
○
○
Head Unit
Pick-Up Unit
Servo Motor
Spindle Motor

Figure 11

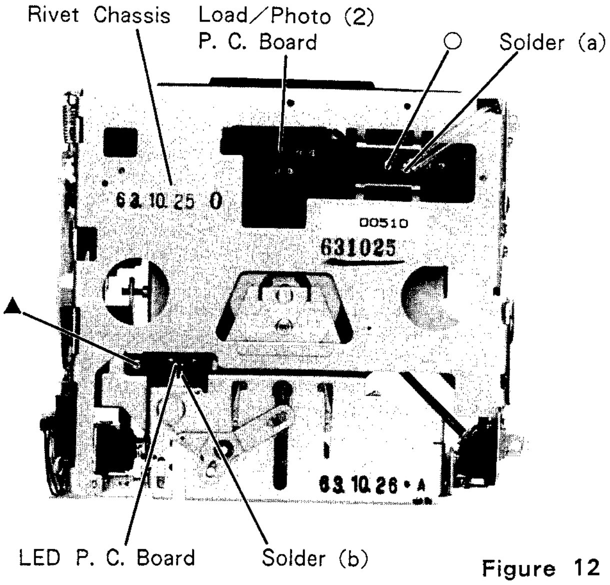

Rivet Chassis
Load/Photo (2) P. C. Board
○
Solder (a)
▲
63 10 25 0
00510
631025
63 10 26 • A
LED P. C. Board
Solder (b)

Figure 12

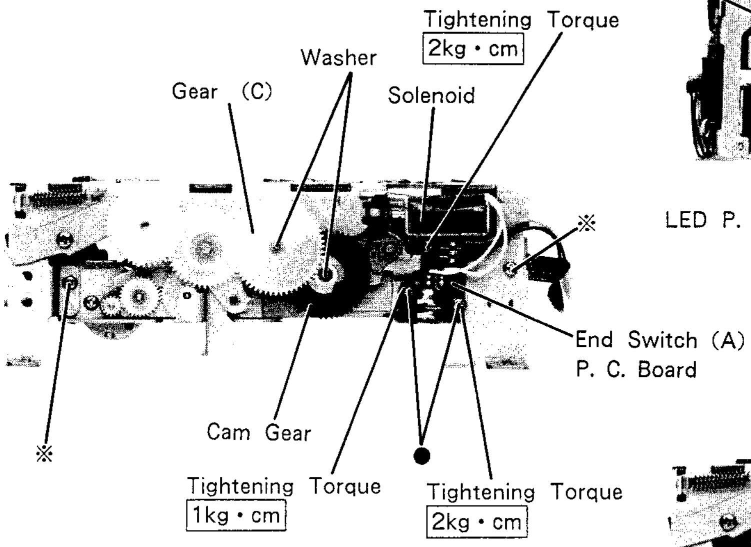

Tightening Torque
2kg • cm
Washer
Gear (C)
Solenoid
※
End Switch (A) P. C. Board
Cam Gear
※
●
Tightening Torque
1kg • cm
Tightening Torque
2kg • cm

Figure 13

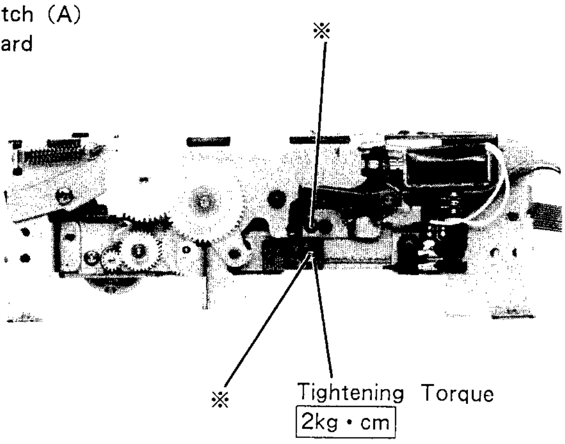

※
※
Tightening Torque
2kg • cm

Figure 14

5. **Removal of the Rivet Loading Bracket Assembly**
   (1) After removing the Pick-Up Unit, pull the Rivet Loading Bracket Assembly toward you while twisting it in the direction shown by the arrow, as shown in Figure 15.

6. **Removal of the Servo Motor [For DP24A010 / DP24A020 / DP24A110 / DP24A11A / DP24A210 models only]**
   (1) After removing the Rivet Loading Bracket Assembly, remove the two screws marked with "□" as shown in Figure 16.
   Note :Both the Servo Motor and Flexible wire will be removed. Do not damage the flexible wire.

7. **Removal of the Head Unit [For DP24A010/DP24A020/DP24A110/DP24A11A/DP24A210 models only]**
   (1) After removing the Servo Motor, remove the two screws marked with "◆" as shown in Figure 16.

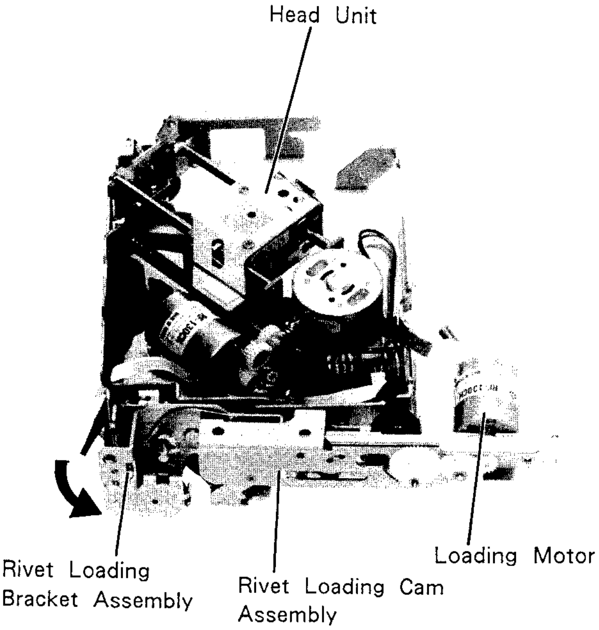

Head Unit
Rivet Loading Bracket Assembly
Rivet Loading Cam Assembly
Loading Motor

Figure 15

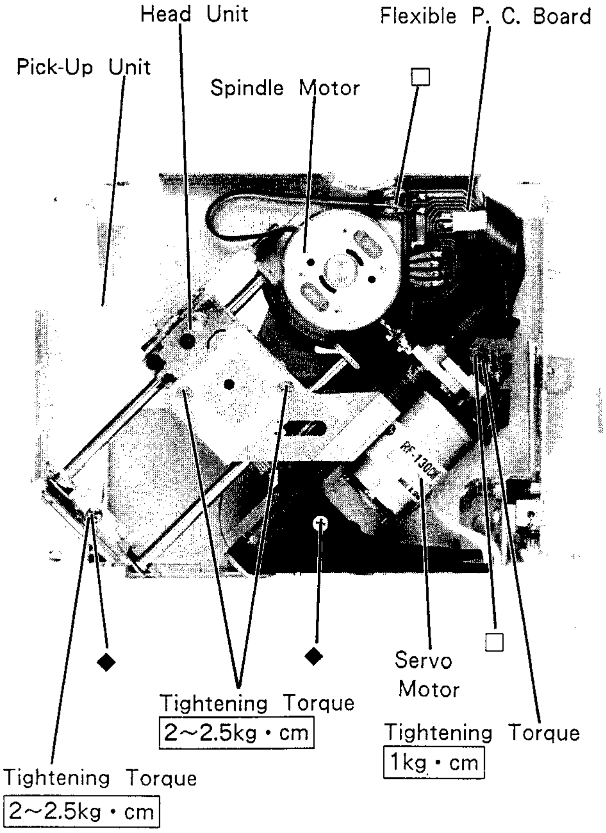

Head Unit
Flexible P. C. Board
Pick-Up Unit
Spindle Motor
□
◆
◆
Servo Motor
□
Tightening Torque
2~2.5kg・cm
Tightening Torque
1kg・cm
Tightening Torque
2~2.5kg・cm

Figure 16

6. Removal of the Servo Motor [For DP24A220 models only]

(1) After removing the Rivet Loading Bracket Assembly, remove the two screws marked with "□" as shown in Figure 17.

Note :Both the Servo Motor and Flexible wire will be removed. Do not damage the flexible wire.

7. Removal of the Head Unit [For DP24A220 models only]

(1) After removing the Servo Motor, remove the five screws marked with "◆" as shown in Figure 17.

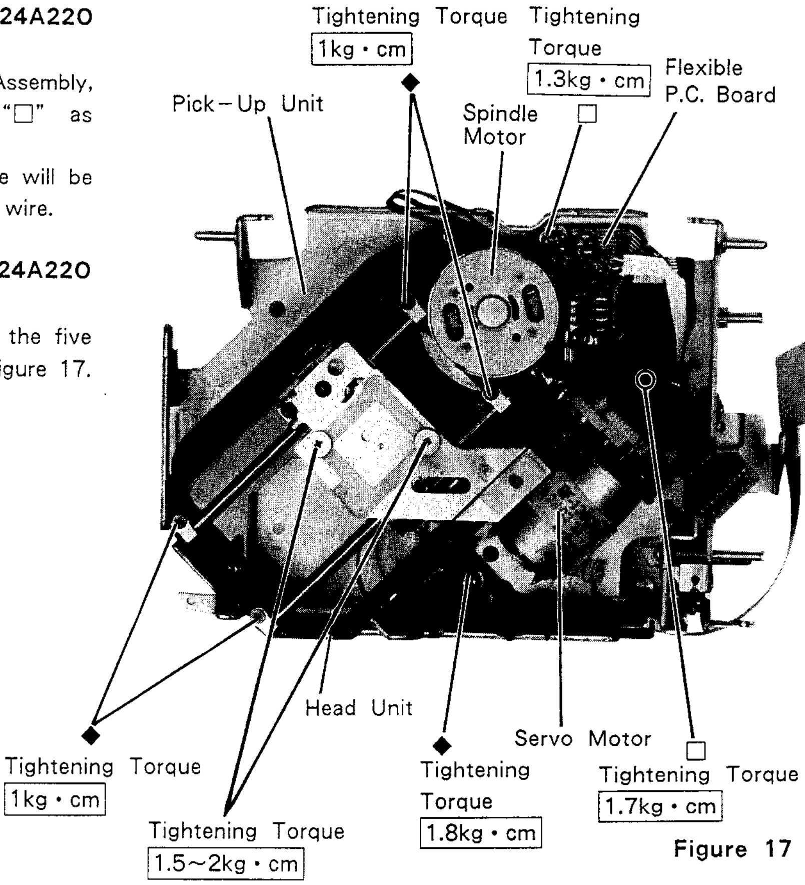

Tightening Torque 1kg • cm
◆
Tightening Torque 1.3kg • cm
Flexible P.C. Board
Pick-Up Unit
Spindle Motor
□
Head Unit
◆
Tightening Torque 1kg • cm
Tightening Torque 1.5~2kg • cm
◆
Tightening Torque 1.8kg • cm
Servo Motor
□
Tightening Torque 1.7kg • cm

Figure 17

8. Removal of the Rivet Loading Cam Assembly

(1) After removing the Rivet Loading Bracket Assembly, remove the gear (D) and gear (E) as shown in Figure 18.

(2) Remove the Washer and "E" ring as shown in Figures 18 and 20.

Note : 1) Do not lose the washer and "E" ring and keep them carefully.

2) Remove the spring and them at the same time as shown in Figure 18.

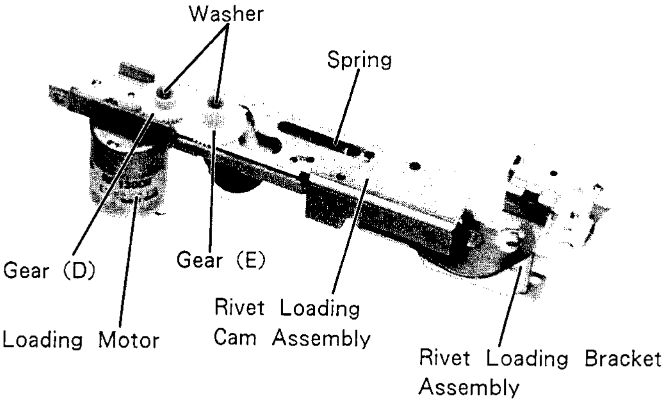

Washer
Spring
Gear (D)
Gear (E)
Loading Motor
Rivet Loading Cam Assembly
Rivet Loading Bracket Assembly

Figure 18

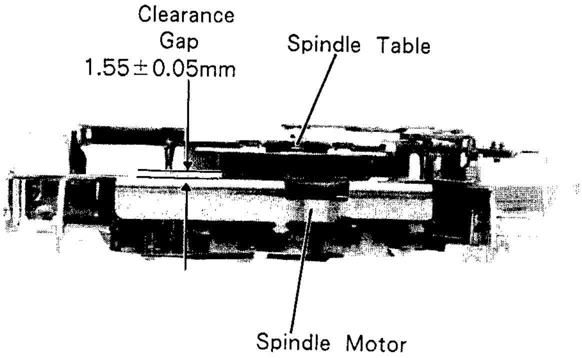

Clearance Gap 1.55±0.05mm
Spindle Table
Spindle Motor

Figure 19

9. Removal of the Loading Motor.

(1) After removing the Rivet Loading Cam Assembly, remove the two screws marked with "△" as shown in Figure 20.

※**Useful hints for remounting the cam gear and gear (C).**

(1) Set the Rivet Loading cam Assembly to the loading position as shown in Figure 21.

(2) Engage the cam gear with the gear (C) as shown in the Figure 22, and mount them on the shafts (A) of the Arm Load (R) Assembly as shown in Figure 21.

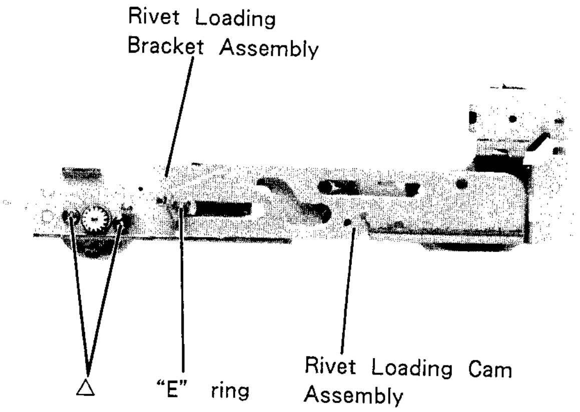

Rivet Loading Bracket Assembly
△
"E" ring
Rivet Loading Cam Assembly

Figure 20

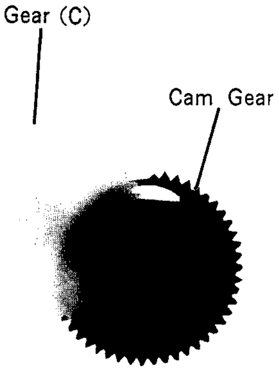

Gear (C)
Cam Gear

Figure 22

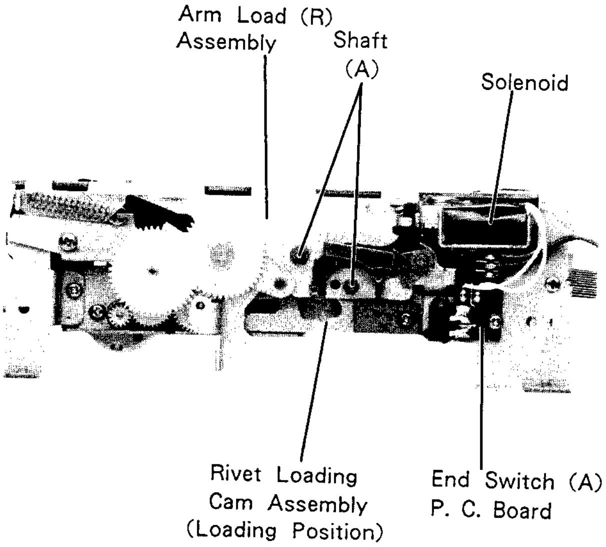

Arm Load (R) Assembly
Shaft (A)
Solenoid
Rivet Loading Cam Assembly (Loading Position)
End Switch (A) P. C. Board

Figure 21

※**Caution on remounting the Servo Motor.**

(1) After mounting the servo motor, make sure the clearance between the servo motor and flexible wire is more than 0.5mm as shown in Figure 23.

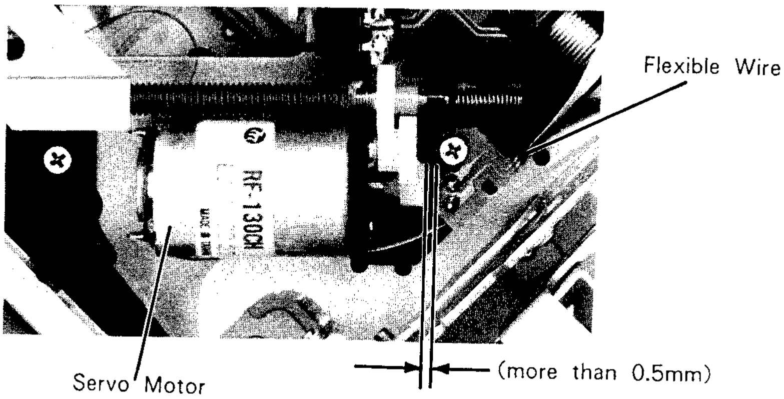

Flexible Wire
RF-130CH
Servo Motor
(more than 0.5mm)

Figure 23

CD Mechanism Assembly Parts List

●For DP24A010/DP24A020/DP24A110/DP24A11A/DP24A210 Models

Symbol No.	Index	Part No.	Description		
202	4-H	15C13518W01	Guide, Top (DP-2)		
203	5-C	03S44205G14	Screw, Pan (M2 × 5)		
204	5-B	30T73687F18	Parallel Wire (2P)		
205	4-C	41B12249W02	Spring, Pull		
206		04B41345P06	Washer, Lock (M2.1)		
207	1-E	41A20219W01	Spring, ROL (L)		
208	5-F	45A90817F01	Arm, Solenoid (1)		
209	5-F	45A90818F01	Arm, Solenoid (2)		
210	5-F	41A92364F01	Spring, Solenoid		
211	2-F	07B10907W01	Stopper, Disc		
212	4-F	47A61544F02	Plunger, RF Solenoid		
213	3-G	75A20934W01	Cushion, Magnet (B)		
214	4-F	84A92276F01	END Switch (A) P.C. Board		
215		03D40014G66	Screw, W/Washer (M2 × 3.5)		
216		03D40014G07	Screw, W/Washer (M2 × 4)		
217	4-F	44B90838F01	Gear, Cam		
218	4-C	46A91007F02	Stud, Gear		
219	4-E	41B12249W07	Spring, Pull		
221	2-F	49B90822F01	Roller (G)		
223		43A90873F01	Bush, Roller		
225	4-C	41A90877F01	Spring, Cam		
226		03D40014G62	Screw, W/Washer (M2 × 3)		
227	5-C	44A90836F01	Gear (D)		
228	5-C	44A90837F01	Gear (E)		
229	5-C	04B41345P01	Washer, Lock (M1.2)		
230		75B11922W02	Damper, DP-3		
231		15A12929W01	Holder, Damper-3		
232	4-D	04C42091G06	Ring “E” (M1.5)		
233	5-C	04C42091G11	Ring “E” (M2.5)		
234	3-C	03S94385F01	Screw, Pan (M1.7 × 2.3)		
236	4-C	41A11905W01	Spring, Trigger		
237	4-F	04C42091G05	Ring “E” (M2)		
238	2-B	07A10921W01	Bracket, Shaft		
239	4-A	03A90175F05	Screw, Bind (M2 × 3.7)		
240		03S94385F09	Screw, Pan (M2 × 3)		

Symbol No.	Index	Part No.	Description		
241	4-A	03D40014G75	Screw, W/Washer (M2 × 9)		
242	3-B	03D40121T38	Screw, W/Double Washer (M2 × 5)		
243	3-E	43A22104W01	Table, Spindle		
244	3-B	07B10923W01	Bracket, Screw		
245	2-C	47A20146W01	Shaft, Pick-up		
246	4-D	43A11901W01	Bush, Triger (A)		
247		04B41345P15	Washer, Lock (M1.2)		
248	3-D	01B12125W01	Assy., Riv. Pick Chassis		
249	3-B	47A10927W01	Shaft, Screw		
250	3-B	44A90998F01	Gear, Screw		
252	4-B	44A90996F01	Gear, Motor		
253	4-G	41B12249W08	Spring, Pull		
254	4-C	44A90997F01	Gear, Middle		
255		04B41345P02	Washer, Lock (M1.7)		
256	4-F	03S94385F23	Screw, Pan (M2 × 5)		
257	5-D	03S94385F07	Screw, Pan (M2 × 2)		
258	3-C	07C10922W01	Bracket, Motor		
259	4-B	41A10928W03	Spring, Shaft		
262	5-G	04S40075G12	Washer, Polyslider (M3.1)		
263	3-B	41C10925W01	Spring, Nut		
264	3-E	14A96087F01	Sheet, Table		
265	4-B	84T15149W01	FPC Actuate P.C.Board		
266	4-E	01A12222W01	Assy., Clamper Rivet		
267	4-E	01B12123W01	Assy., Riv. Arm Clamp		
269	3-F	41A11903W01	Spring, Lever		
270	3-F	04B41345P04	Washer, Lock (M2.6)		
271	3-E	07A30152W01	Bracket, Disc Stopper		
272	3-F	41B12249W01	Spring, Pull		
273	4-F	07A11468W01	Plate, Top		
274	5-C	44A90830F01	Rack, Cam		
275	4-F	03S44205G94	Screw, Pan (M1.7 × 2)		
277	2-B	47A21175W01	Shaft, Pick-up		
279	1-C	41B12249W03	Spring, Pull		
280	2-E	41B12249W04	Spring, Pull		
281	4-D	41B12249W05	Spring, Pull		

NOTE : The parts without part numbers are not supplied.

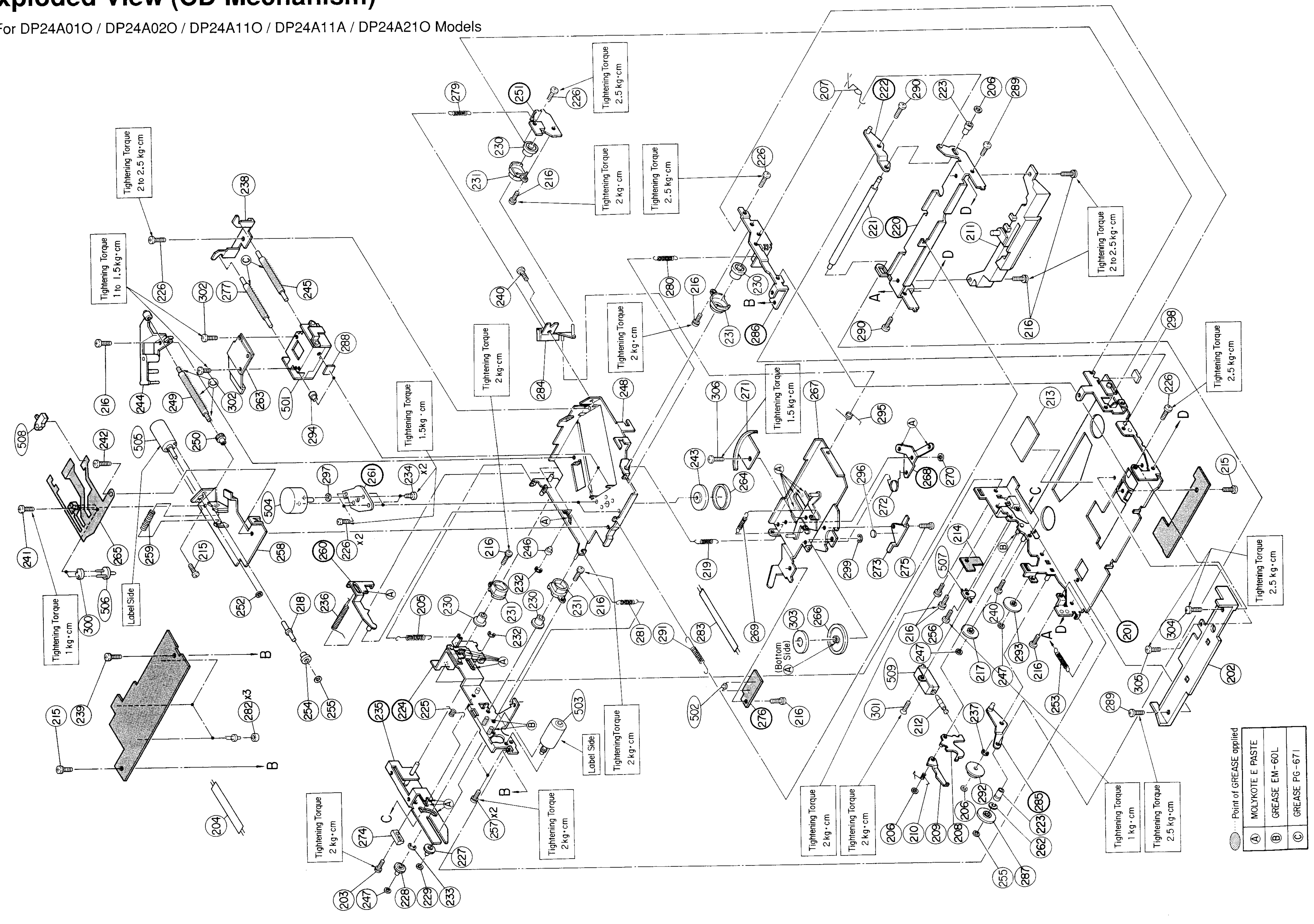
Symbol No.	Index	Part No.	Description		
282	4-B	43A20208W01	Spacer, LED		
283	4-E	30T73687F19	Parallel Wire (2P)		
284	3-D	01A92321F02	Assy., Bracket Rivet (CLP−LP)		
287	5-G	01T15181W01	Assy., Clutch DP		
288	2-C	75A21138W01	Sheet, Shaft		
289		03A90175F01	Screw, Bind (M2 × 4)		
290		03A90175F02	Screw, Bind (M2 × 3)		
291	4-E	41B90875F07	Spring, Pull		
292	5-F	44A90834F01	Gear (B)		
293	4-F	44A90835F01	Gear (C)		
294	3-C	43A13508W01	Spacer, Shaft		
295	3-F	41A96086F01	Spring, Arm Clamp		
296	3-F	43A41006F01	Spacer, Polyslider		
297	3-C	43A22457W01	Spacer		
or		43A22457W02	Spacer		
298	2-G	75A20928W01	Rubber, Top Chassis		
299	4-F	04B41345P24	Washer, Lock (M2.1)		
300	4-A	43A20208W02	Spacer, LED (A)		
301	4-F	03S94385F14	Screw, Countersink (M2.6 × 3)		
302		03S94385F25	Screw, Pan (M2 × 4)		
303	4-E	75A20128W01	Sheet, Holder		
304	4-G	03S44205G96	Screw, Bind (M2 × 5)		
305	4-G	03S44205G95	Screw, Bind (M2 × 3)		
306	3-E	03S94385F24	Screw, Pan (M2 × 3)		
Miscellaneous					
501	3-C	88T15309W01	Pick-up, Unit		
502	4-E	48T16057W02	LED, AN501 (RED)		
503	4-D	01V13100W97	Assy., Motor Load		
504	3-C	59T91005F01	Motor, Spindle		
505	3-B	59T52973F03	Motor, Servo		
506	4-B	48T92913F01	Transistor, Photo PT360		
507	4-F	40T71025F03	Switch, Detector (CAM END)		
508	3-A	40T71025F01	Switch, Detector (LIMIT)		
509	4-F	01A90816F01	Assy., Solenoid DP Frame		

Symbol No.	Index	Part No.	Description		

NOTE : The parts without part numbers are not supplied.

Exploded View (CD Mechanism)

- For DP24A01O / DP24A02O / DP24A11O / DP24A11A / DP24A21O Models



1
2
3
4
5
A
B
C
D
E
F
G
H
279
251
226
Tightening Torque 2.5 kg·cm
230
231
216
Tightening Torque 2 kg·cm
Tightening Torque 2.5 kg·cm
Tightening Torque 2 to 2.5 kg·cm
238
226
Tightening Torque 1 to 1.5 kg·cm
302
277
245
288
501
294
263
302
249
244
216
250
505
242
508
241
265
259
215
258
504
297
261
234
x2
Tightening Torque 1.5kg·cm
226
x2
260
236
218
252
300
506
Label Side
Tightening Torque 1 kg·cm
239
282
x3
215
254
255
204
B
240
Tightening Torque 2 kg·cm
284
248
280
216
Tightening Torque 2 kg·cm
231
286
230
B
226
207
222
290
223
206
289
221
220
211
D
D
A
290
216
Tightening Torque 2 to 2.5kg·cm
298
Tightening Torque 2.5 kg·cm
226
D
213
215
306
271
Tightening Torque 1.5 kg·cm
267
243
264
295
296
268
270
272
219
273
275
299
269
303
266
(Bottom Side)
283
291
281
216
231
230
232
246
216
205
230
231
232
235
224
225
503
Label Side
Tightening Torque 2 kg·cm
502
276
216
214
507
C
201
304
202
Tightening Torque 2.5 kg·cm
305
289
509
301
212
237
216
256
247
217
240
293
216
253
247
Tightening Torque 2 kg·cm
Tightening Torque 2 kg·cm
206
210
209
208
206
292
262
223
285
255
287
Tightening Torque 1 kg·cm
Tightening Torque 2.5 kg·cm
274
C
Tightening Torque 2 kg·cm
203
247
228
229
233
227
257
x2
Tightening Torque 2 kg·cm

Point of GREASE applied
Ⓐ MOLYKOTE E PASTE
Ⓑ GREASE EM-60L
Ⓒ GREASE PG-671

CD Mechanism Assembly Parts List

●For DP24A220 Model

Symbol No.	Index	Part No.	Description
202	4-H	15C13518W01	Guide, Top (DP−2)
203	5-C	03S44205G14	Screw, Pan (M2 × 5)
204	5-B	30T73687F18	Parallel Wire (2P)
205	4-C	41B12249W02	Spring, Pull
206		04B41345P06	Washer, Lock (M2.1)
207	1-E	41A20219W01	Spring, ROL (L)
208	5-F	45A90817F01	Arm, Solenoid (1)
209	5-F	45A90818F01	Arm, Solenoid (2)
210	5-F	41A92364F01	Spring, Solenoid
211	2-F	07B10907W01	Stopper, Disc
212	4-F	47A61544F02	Plunger, RF Solenoid
213	3-G	75A20934W01	Cushion, Magnet (B)
214	3-F	84A92276F01	END Switch (A) P.C. Board
215		03D40014G66	Screw, W/Washer (M2 × 3.5)
216		03D40014G07	Screw, W/Washer (M2 × 4)
217	4-F	44B90838F01	Gear, Cam
218	4-C	46A91007F02	Stud, Gear
219	4-E	41B12249W07	Spring, Pull
221	2-F	49B90822F01	Roller (G)
223		43A90873F01	Bush, Roller
225	4-C	41A90877F01	Spring, Cam
226		03D40014G62	Screw, W/Washer (M2 × 3)
227	5-C	44A90836F01	Gear (D)
228	5-C	44A90837F01	Gear (E)
229	5-C	04B41345P01	Washer, Lock (M1.2)
230		75B11922W02	Damper, DP−3
231		15A12929W01	Holder, Damper−3
232		04C42091G06	Ring "E" (M1.5)
233	5-C	04C42091G11	Ring "E" (M2.5)
234	3-C	27C30861W01	Base, Pick-up
236	4-C	41A11905W01	Spring, Trigger
237	4-F	04C42091G05	Ring "E" (M2)
238	3-D	03S94385F26	Screw Countersink (M1.7×2.6)
239	4-A	03A90175F05	Screw, Bind (M2 × 3.7)
240		03S94385F09	Screw, Pan (M2 × 3)
241	4-A	03S94385F20	Screw, Pan (M2 × 8.5)
242	3-B	03D40121T38	Screw, W/Double Washer (M2 × 5)
243	3-E	43A30923W01	Table, Spindle
244	3-B	07B10923W01	Bracket, Screw
245		47A30925W01	Shaft, Pick-up
246	4-D	43A11901W01	Bush, Triger (A)
247		04B41345P15	Washer, Lock (M1.2)
248	3-D	01B12125W01	Assy., Riv. Pick Chassis
249	3-B	47A10927W02	Shaft, Screw
250	3-B	44A90998F01	Gear, Screw
252	4-B	44A90996F01	Gear, Motor
253	4-G	41B12249W08	Spring, Pull
254	4-C	44A90997F01	Gear, Middle
255		04B41345P02	Washer, Lock (M1.7)
256	4-F	03S94385F23	Screw, Pan (M2 × 5)
257	5-D	03S94385F07	Screw, Pan (M2 × 2)
258	3-C	07C10922W01	Bracket, Motor
259	4-B	41A10928W03	Spring, Shaft
261		03D40014G02	Screw, W/Washer (M2 × 6)
262	3-E	41A10928W04	Spring, Comp
263	3-B	41C10925W02	Spring, Nut
264	3-E	14A96087F01	Sheet, Table
265	4-B	84T15149W01	FPC Actuate P.C.Board
266	4-E	01A31429W01	Assy., Clamper Rivet
267	3-E	01B12123W01	Assy., Riv. Arm Clamp
269	4-E	41A11903W01	Spring, Lever
270	3-F	04B41345P04	Washer, Lock (M2.6)
271	3-E	07A30152W01	Bracket, Disc Stopper
272	3-F	41B12249W01	Spring, Pull
273	4-F	07A11468W01	Plate, Top
274	5-C	44A90830F01	Rack, Cam
275	4-F	03S44205G94	Screw, Pan (M1.7 × 2)
277	3-E	43B30924W01	Spindle, Hub
279	1-C	41B12249W03	Spring, Pull
280	2-E	41B12249W04	Spring, Pull

NOTE : The parts without part numbers are not supplied.

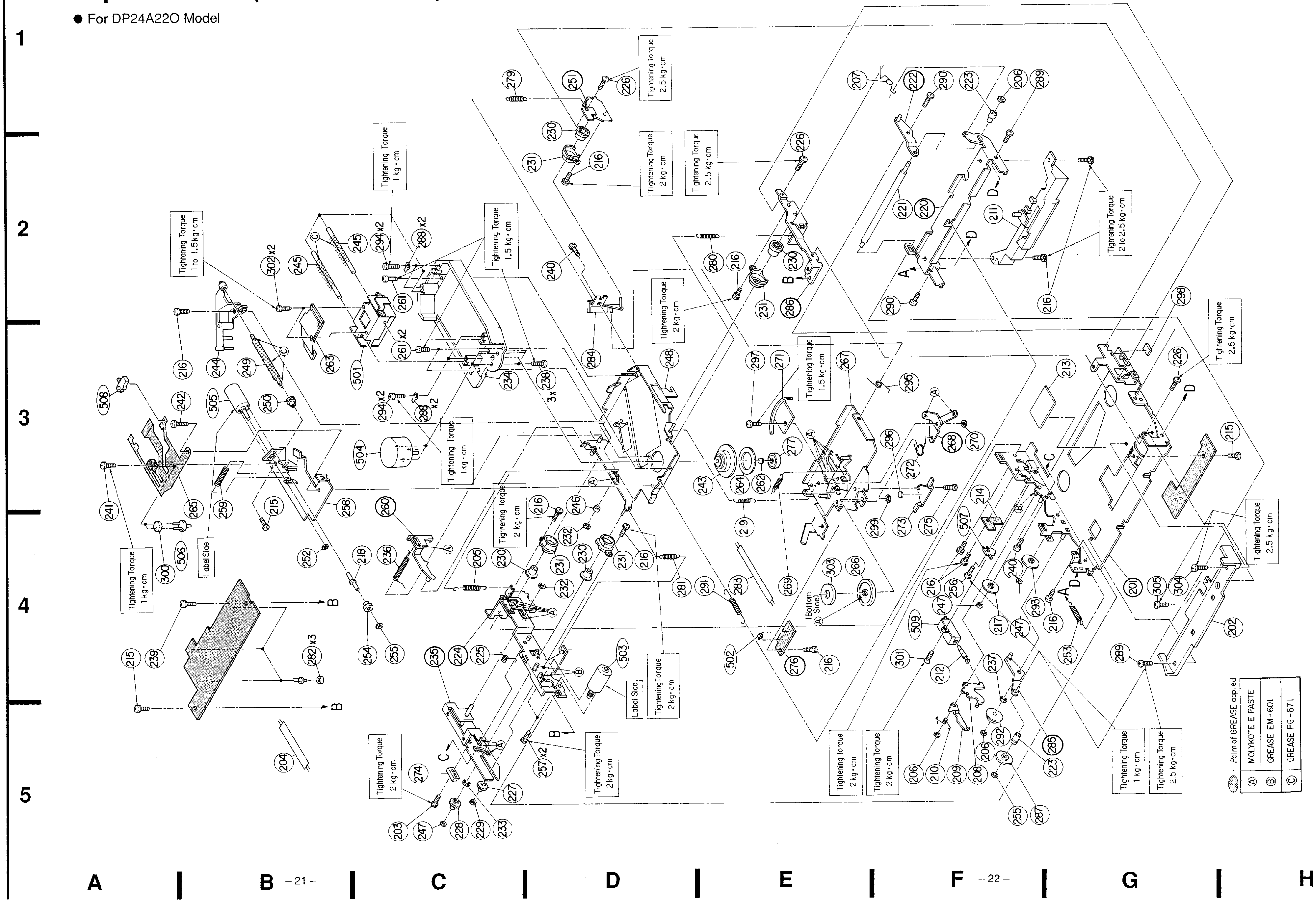
Symbol No.	Index	Part No.	Description
281	4-D	41B12249W05	Spring, Pull
282	4-B	43A20208W01	Spacer, LED
283	4-E	30T73687F19	Parallel Wire (2P)
284	3-D	01A92321F02	Assy., Bracket Rivet (CLP−LP)
287	5-G	01T15181W01	Assy., Clutch DP
288		07A30961W01	Stopper, Shaft (B)
289		03A90175F01	Screw, Bind (M2 × 4)
290		03A90175F02	Screw, Bind (M2 × 3)
291	4-E	41B90875F07	Spring, Pull
292	5-F	44A90834F01	Gear (B)
293	4-F	44A90835F01	Gear (C)
294		03S70494F14	Screw, Pan (M1.7 × 4)
295	3-F	04S40075G06	Washer, Plyslider (M2.1)
296	3-F	43A41006F01	Spacer, Polyslider
297	3-E	03S94385F24	Screw, Pan (M2 × 3)
298	2-G	75A20928W01	Rubber, Top Chassis
299	4-F	04B41345P24	Washer, Lock (M2.1)
300	4-A	43A20208W02	Spacer, LED (A)
301	4-F	03S94385F14	Screw, Countersink (M2.6 × 3)
302	2-B	03S94385F25	Screw, Pan (M2 × 4)
303	4-E	75A20128W01	Sheet, Holder
304	4-G	03S44205G96	Screw, Bind (M2 × 5)
305	4-G	03S44205G95	Screw, Bind (M2 × 4)
Miscellaneous			
501	3-C	88T15309W01	Pick-up, Unit
502	4-E	48T16057W02	LED, AN501 (RED)
503	4-D	01V13100W97	Assy., Motor Load
504	3-C	59T91005F02	Motor, Spindle
505	3-B	59T52973F03	Motor, Servo
506	4-B	48T92913F01	Transistor, Photo PT360
507	4-F	40T71025F03	Switch, Detector (CAM END)
508	3-A	40T71025F01	Switch, Detector (LIMIT)
509	4-F	01A90816F01	Assy., Solenoid DP Frame

NOTE : The parts without part numbers are not supplied.

Symbol No.	Index	Part No.	Description

Exploded View (CD Mechanism)

- For DP24A22O Model


1
2
3
4
5
A
B
C
D
E
F
G
H
Tightening Torque 2.5 kg·cm
Tightening Torque 2 kg·cm
Tightening Torque 2.5 kg·cm
Tightening Torque 1 kg·cm
Tightening Torque 1.5 kg·cm
Tightening Torque 1 to 1.5 kg·cm
Tightening Torque 2 kg·cm
Tightening Torque 1.5 kg·cm
Tightening Torque 2 to 2.5 kg·cm
Tightening Torque 2.5 kg·cm
Tightening Torque 1 kg·cm
Tightening Torque 2 kg·cm
Tightening Torque 1 kg·cm
Tightening Torque 2 kg·cm
Tightening Torque 2 kg·cm
Tightening Torque 2 kg·cm
Tightening Torque 2 kg·cm
Tightening Torque 2 kg·cm
Tightening Torque 1 kg·cm
Tightening Torque 2.5 kg·cm
Tightening Torque 2.5 kg·cm
Label Side
Label Side
(Bottom Side)
302 x2
294 x2
288 x2
261 x2
294 x2
288 x2
3x
282 x3
257 x2
279
251
226
230
231
216
207
222
290
223
206
289
226
221
220
211
216
290
280
216
230
286
231
240
284
248
245
245
263
501
261
234
238
244
249
216
242
508
505
250
504
265
241
300
506
259
215
258
252
260
218
236
205
230
231
232
216
246
232
230
231
216
281
297
271
267
295
268
270
296
272
273
275
299
243
264
262
277
219
269
283
291
303
266
276
216
502
239
215
282
254
255
235
224
225
503
204
274
203
247
228
229
233
227
213
226
298
215
214
507
216
256
240
247
217
293
216
253
201
305
304
202
289
509
301
212
237
206
210
209
208
292
285
223
255
287
A
B
C
D
Point of GREASE applied
Ⓐ MOLYKOTE E PASTE
Ⓑ GREASE EM-60L
Ⓒ GREASE PG-671

CD Mechanism Assembly Parts List

● For DP22A070／DP22A080／DP22A310／DP22A320 Models

Symbol No.	Index	Part No.	Description		
202	4-H	15C13518W01	Guide, Top (DP−2)		
203	5-C	03S44205G14	Screw, Pan (M2×5)		
204	5-B	30T73687F18	Parallel, Wire (2P)		
205		03A90175F01	Screw, Bind (M2×4)		
206		04B41345P06	Washer, Lock (M2.1)		
207	1-E	41A20219W01	Spring, ROL		
208	5-F	45A90817F01	Arm, Solenoid. (1)		
209	5-F	45A90818F01	Arm, Solenoid. (2)		
210	5-F	41A92364F01	Spring, Solenoid.		
□ 211	2-F	07B10907W02	Stopper, Disc		
☆ 211	2-F	07B10907W02	Stopper, Disc		
◇ 211	2-F	07B10907W02	Stopper, Disc		
212	4-F	47A61544F02	Plunger, F／R		
213	4-F	03S94385F14	Screw, Countersink (M2.6×3)		
214	4-F	84A92276F01	END Switch (A) P.C. Board		
215		03D40014G66	Screw, W／Washer (M2×3.5)		
216		03D40014G07	Screw, W／Washer (M2×4)		
217	4-F	44B90838F01	Gear, Cam		
218	4-B	46A91007F01	Stud, Gear		
219	4-E	41B12249W07	Spring, Pull		
221	2-F	49B90822F01	Roller (G)		
223		43A90873F01	Bush, Roller		
225	4-C	41A90877F01	Spring, Cam		
226		03D40014G62	Screw, W／Washer (M2×3)		
227	5-C	44A90836F01	Gear (D)		
228	5-C	44A90837F01	Gear (E)		
229	5-C	04B41345P01	Washer Lock (M1.2)		
230		75B11922W02	Damper, DP-3		
231		15A12929W01	Holder, Damper DP-3		
232		04C42091G06	Ring "E" (M1.5)		
233		04C42091G11	Ring "E" (M2.5)		
234	3-D	03S94385F01	Screw, Pan (M1.7×2.3)		
236	4-B	41A11905W01	Spring, Trigger		
237	3-F	04B41345P04	Washer, Lock (M2.6)		
239		04B41345P24	Washer, Lock (M2.1)		
240		03S94385F09	Screw, Pan (M2×3)		
241		04B41345P15	Washer, Lock (M1.2)		
242	3-F	30T73687F14	Parallel, Wire (3P)		
243	3-E	43A22104W01	Table, Spindle		
244	3-A	07A90992F01	Bracket, Screw		
245	3-D	47A91004F01	Shaft, Pick-up		
246	4-D	43A11901W01	Bush, Trigger (A)		
247		03S94385F10	Screw, Pan (M2×4)		
248	3-E	07A92196F01	Bracket, Flex Wire		
249	3-C	03A91001F01	Shaft, Screw		
250	3-C	44A90998F01	Gear, Screw		
252	4-B	44A90996F01	Gear, Motor		
253	4-G	41B12249W08	Spring, Pull		
254	4-B	44A90997F01	Gear, Middle		
255	4-B	04B41345P13	Washer, Lock (M1.7)		
256	4-F	03S94385F23	Screw, Pan (M2×5)		
△ 257	1-A	03S44205G42	Screw, Pan (M2.6×4)		
□ 257	1-A	03S44205G42	Screw, Pan (M2.6×4)		
◇ 257	1-A	03S44205G42	Screw, Pan (M2.6×4)		
258	3-B	01V91700F07	Assy., Motor Unit		
259	3-A	41A90999F01	Spring, Screw		
261	1-C	41B21241W02	Spring, Pull		
262	2-C	30T92773F01	Cable, Flex (16P)		
263	2-B	26A94948F01	Shield		
△ 263	2-B	26A94948F01	Shield		
□ 263	2-B	26A94948F01	Shield		
◇ 263	2-B	26A94948F01	Shield		

Notes : The parts without part numbers are not supplied.
△ : For DP22A07O model only, □ : For DP22A08O model only, ☆ : For DP22A31O model only,
◇ : For DP22A32O model only, Others : Common

Symbol No.	Index	Part No.	Description		
264	3-E	14A96087F01	Sheet, Table		
265	4-B	84T15747W01	FPC Actuator P. C. Board		
266	4-E	01A12222W01	Assy., Clamper Rivet		
267	3-E	01B12123W01	Assy., Riv. Arm Clamp		
269	3-F	41B12249W01	Spring, Slider		
270		43A90995F01	Stopper, Shaft		
271	3-E	07A30152W01	Bracket, Disc Stopper		
272	4-E	41A11903W01	Spring, Lever		
273	4-F	07A11468W01	Plate, Top		
274	5-C	44A90830F01	Rack, Cam		
275	4-F	03S44205G94	Screw, CounterSink (M2.6 × 8)		
△ 277	2-C	01V23100W27	Assy., Pick-up Unit-S2		
□ 277	2-C	01V24900W02	Assy., Pick-up Unit-S2		
☆ 277	2-C	01V24900W02	Assy., Pick-up Unit-S2		
◇ 277	2-C	01V24900W02	Assy., Pick-up Unit-S2		
279	4-C	41B21241W01	Spring, Pull		
280	2-E	41B21241W03	Spring, Pull		
281	4-D	41B21241W04	Spring, Pull		
282	5-B	43A20208W01	Spacer, LED		
283	4-E	30T73687F20	Parallel, Wire (2P)		
284	3-D	01A92321F02	Assy., Bracket, Rivet (CLP-LP)		
287	5-F	01T15181W01	Assy., DP Clutch		
288	5-F	04B41345P02	Washer, Lock (M1.7)		
290		03A90175F02	Screw, Bind (M2×3)		
291	4-E	41B90875F07	Spring, Pull		
292	5-F	44A90834F01	Gear (B)		
293	4-F	44A90835F01	Gear (C)		
295	4-D	43A20208W03	Spacer, LED (A)		
296	4-E	75A20128W01	Sheet, Holder		
297		03S94385F10	Screw, Pan (M2×4)		
298	3-B	03S94385F12	Screw, Pan (M2.6×6)		
299	3-A	43A41006F05	Spacer, Polyslider		
300	3-C	07A90993F01	Bracket, Pick-up		
301	2-D	01A90994F01	Spring, Nut		
302	3-D	03S94385F03	Screw, Pan (M1.7×1.8)		
303	3-E	84T90887F01	FPC PHOTO P. C. Board		
304	3-D	14S71058F40	Insulator, Cover		
305	3-D	03S94385F06	Screw, Pan (M2×1.8)		
306	3-B	41A94452F01	Spring, Motor		
307	3-E	14A28008W01	Spacer		
308	3-F	41A96086F01	Spring, Arm Clamp		
309	3-F	43A41006F01	Spacer, Polyslider		
310	3-E	03S94385F24	Screw, Pan (M2 × 3)		
311	4-G	03S44205G96	Screw, Bind (M2 × 5)		
312	4-G	03S44205G95	Screw, Bind (M2 × 4)		

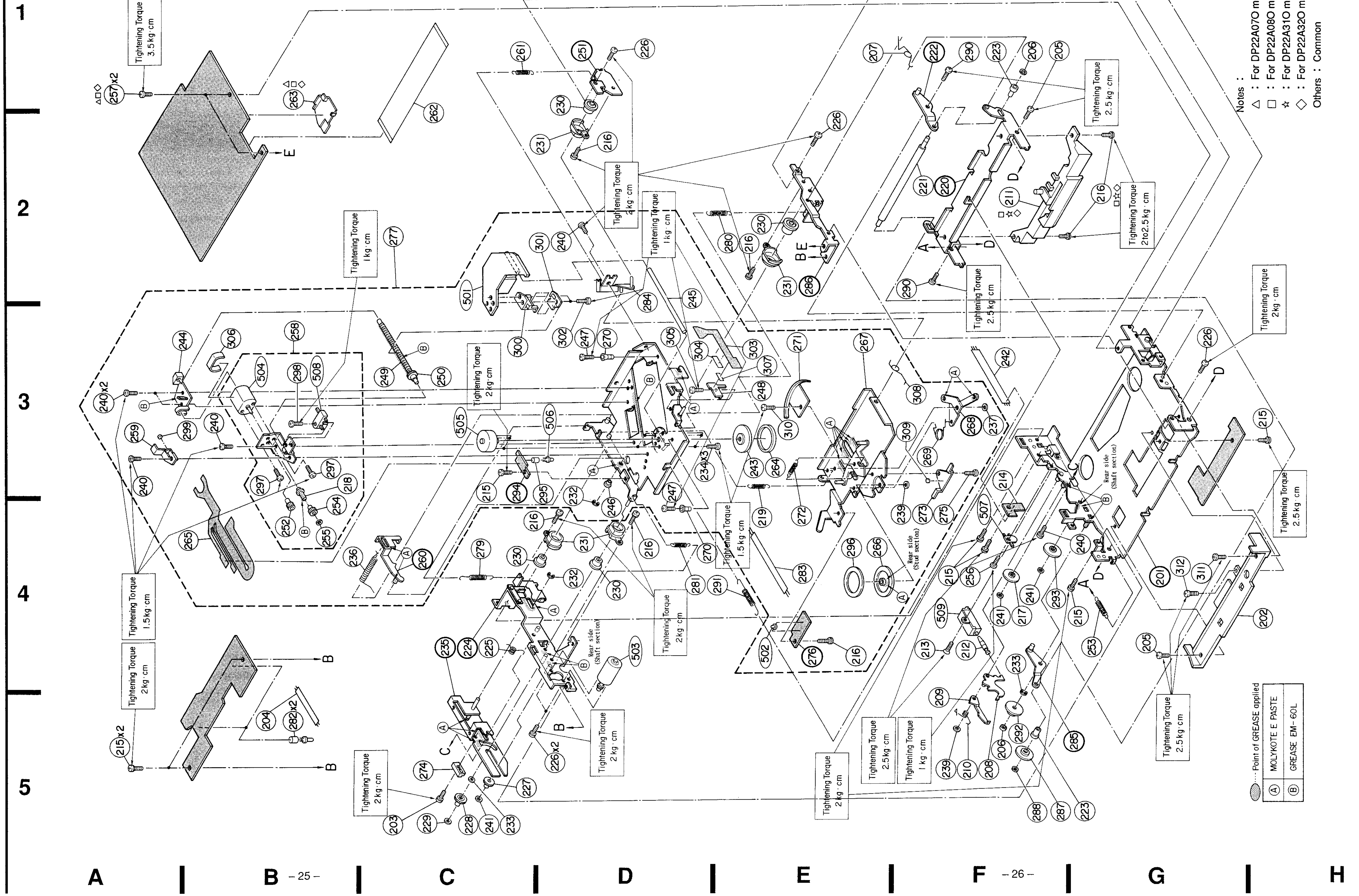
Miscellaneous

Symbol No.	Index	Part No.	Description		
501	3-C	88T90878F01	Pick-up, Unit		
502	4-E	48T16057W02	LED, AN501-B1 (RED)		
503	4-D	01V21900W45	Assy., Motor Load		
504	3-B	59T90879F01	Motor, Servo		
505	3-C	59T91005F01	Motor, Spindle		
506	3-D	48T92913F01	Transistor, Photo PT360		
507	4-F	40T71025F03	Switch, Detector		
508	3-B	40T71025F01	Switch, Detector		
509	4-F	01A90816F01	Assy., Solenoid DP Frame		

Notes : The parts without part numbers are not supplied.
△ : For DP22A07O model only, □ : For DP22A08O model only, ☆ : For DP22A31O model only,
◇ : For DP22A32O model only, Others : Common

Exploded View (CD Mechanism)

- For DP22A07O / DP22A08O / DP22A31O / DP22A32O Models



1
2
3
4
5
A
B
C
D
E
F
G
H
Tightening Torque 3.5 kg·cm
△□◇ 257 x2
△□◇ 263
262
E
261
251
226
230
231
216
Tightening Torque 4 kg·cm
Tightening Torque 1 kg·cm
Tightening Torque 1 kg·cm
277
301
240
501
284
245
300
302
247
270
249
250
B
Tightening Torque 2 kg·cm
244
306
258
504
298
508
240 x2
299
259
240
297
218
254
252
255
265
236
260
A
279
505
506
215
294
295
232
246
216
231
230
232
230
216
270
281
291
Tightening Torque 2 kg·cm
305
304
303
307
248
310
271
267
308
234 x3
243
264
272
219
Tightening Torque 1.5 kg·cm
283
296
266
Rear side (Stud section)
276
216
502
280
B E
286
207
222
290
223
206
205
Tightening Torque 2.5 kg·cm
221
220
□☆◇ 211
□☆◇ 216
Tightening Torque 2to2.5 kg·cm
290
Tightening Torque 2.5 kg·cm
D
242
268
237
309
269
273
275
239
214
507
Rear side (Shaft section)
215
256
240
241
241
217
293
215
253
201
312
311
202
509
213
212
233
209
292
206
208
285
239
210
288
287
223
Tightening Torque 2.5 kg·cm
Tightening Torque 1 kg·cm
Tightening Torque 2 kg·cm
205
Tightening Torque 2.5 kg·cm
226
Tightening Torque 2 kg·cm
215
Tightening Torque 2.5 kg·cm
Tightening Torque 1.5 kg·cm
Tightening Torque 2 kg·cm
215 x2
204
282 x2
B
235
224
225
Rear side (Shaft section)
503
226 x2
Tightening Torque 2 kg·cm
274
C
227
Tightening Torque 2 kg·cm
203
229
228
241
233

Notes :
△ : For DP22A07O model only
□ : For DP22A08O model only
☆ : For DP22A31O model only
◇ : For DP22A32O model only
Others : Common

▨ ···· Point of GREASE applied	
Ⓐ	MOLYKOTE E PASTE
Ⓑ	GREASE EM-60L

Disassembly Instructions

● For DP22A070/DP22A080/DP22A310/DP22A320 models

1. Removal of Main P. C. Board

(1) Unsolder the solder (a) as shown in Figure 24.
(2) Remove two screws marked "○" as shown in Figure 24.
(3) Disconnect all connectors from the Main P. C. Board while lifting up the Main P. C. Board A section.

Note : When unsoldering the solder (a), take care not to break the parallel wire.

2. Removal of Interface P. C Board

(1) After removing the Main P. C. Board, unsolder the solder (b) as shown in Figure 25.
(2) Remove two screws marked "×" as shown in Figure 25.
(3) Remove two jumper wires connected to the loading motor.

Note : When unsoldering the solder (b), take care not to break the parallel wire.

3. Removal of Sensor P. C. Board

(1) Unsolder the solder (c) as shown in Figure 26.
(2) Remove one screw marked "△" as shown in Figure 26.

Note : When unsoldering the solder (c), take care not to break the parallel wire.

4. Removal of End Switch P. C. Board

(1) Unsolder the solder (d) and (e) as shown in Figure 27.
(2) Remove two screws marked "□" as shown in Figure 27.

Note : When unsoldering the solder (d), take care not to break the parallel wire.

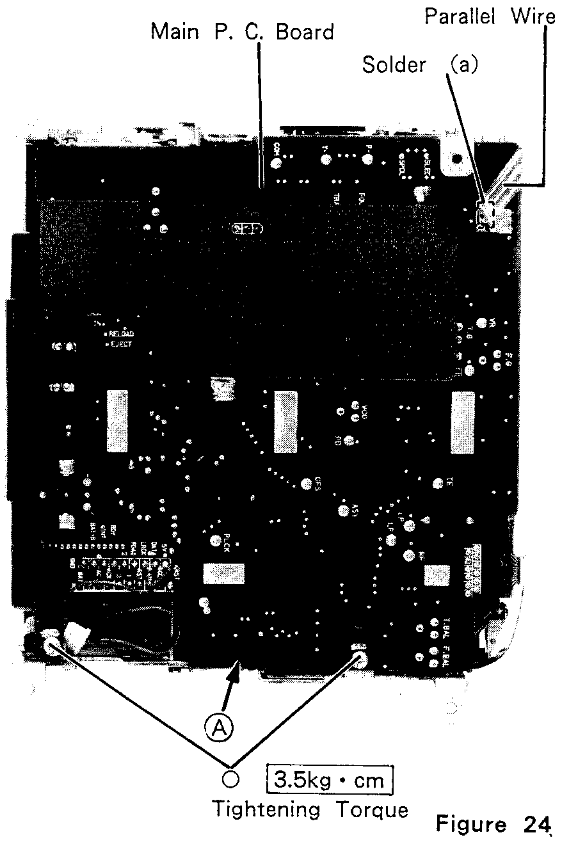

Main P. C. Board
Parallel Wire
Solder (a)
Ⓐ
○ 3.5kg • cm
Tightening Torque

Figure 24

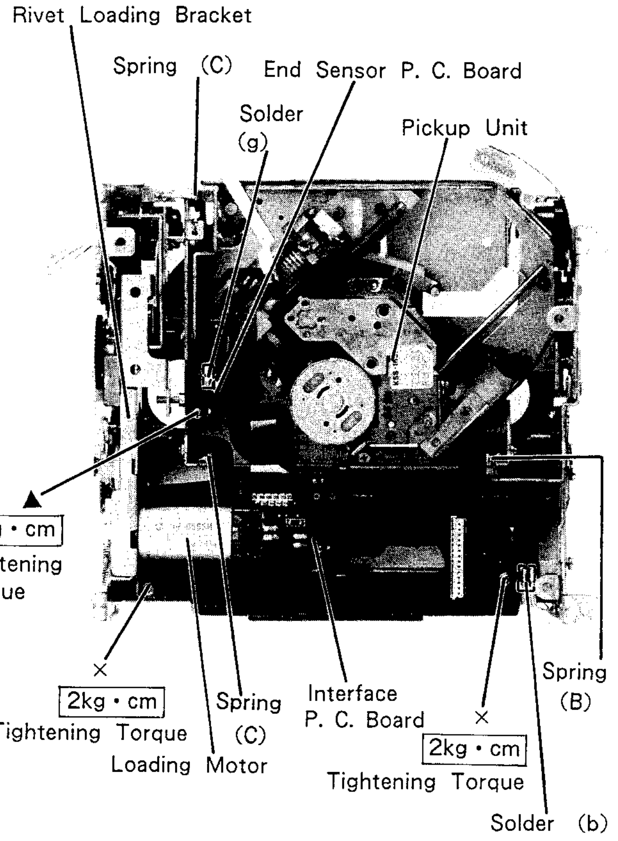

Rivet Loading Bracket
Spring (C)
End Sensor P. C. Board
Solder (g)
Pickup Unit
▲
2kg • cm
Tightening Torque
×
2kg • cm
Tightening Torque
Spring (C)
Loading Motor
Interface P. C. Board
×
2kg • cm
Tightening Torque
Spring (B)
Solder (b)

Figure 25

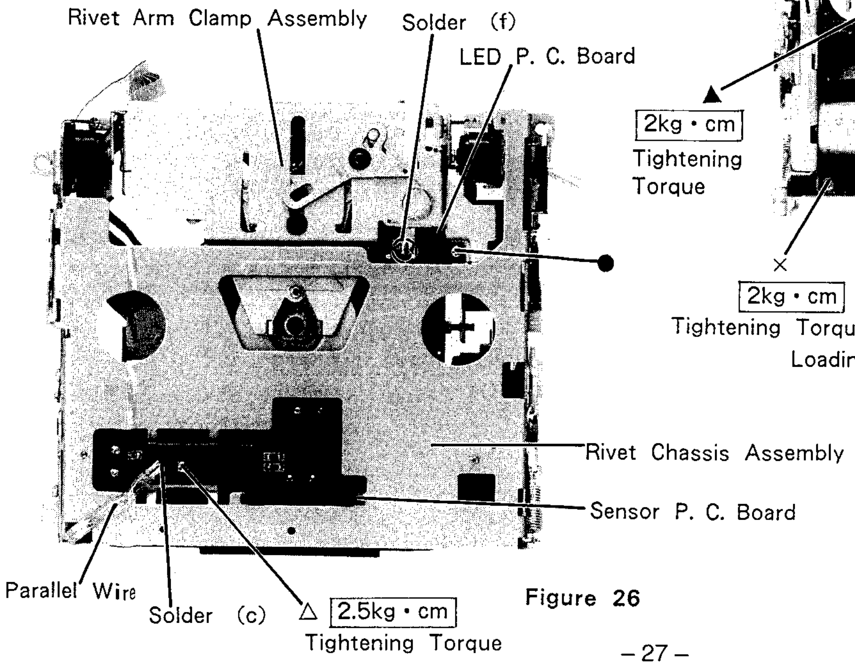

Rivet Arm Clamp Assembly
Solder (f)
LED P. C. Board
●
Rivet Chassis Assembly
Sensor P. C. Board
Parallel Wire
Solder (c)
△ 2.5kg • cm
Tightening Torque

Figure 26

5. Removal of LED P. C. Board

(1) Unsolder the solder (f) as shown in Figure 26.
(2) Remove one screw marked "●" as shown in Figure 26.

Note : When unsoldering the solder (f), take care not to break the parallel wire.

6. Removal of End Sensor P. C. Board

(1) After removing the Main P. C. Board, unsolder the solder (g) as shown in Figure 25.
(2) Remove one screw marked "▲" as shown in Figure 25.

Note : When unsoldering the solder (g), take care not to break the parallel wire.

7. Removal of Damper (L) Bracket

(1) After removing the Main and Interface P. C.Boards, remove one spring (A) as shown in Figure 28.
(2) Remove one screw marked "■" as shown in Figure 28.
(3) Remove the damper from the Pickup Unit shaft, and the bracket can be removed.

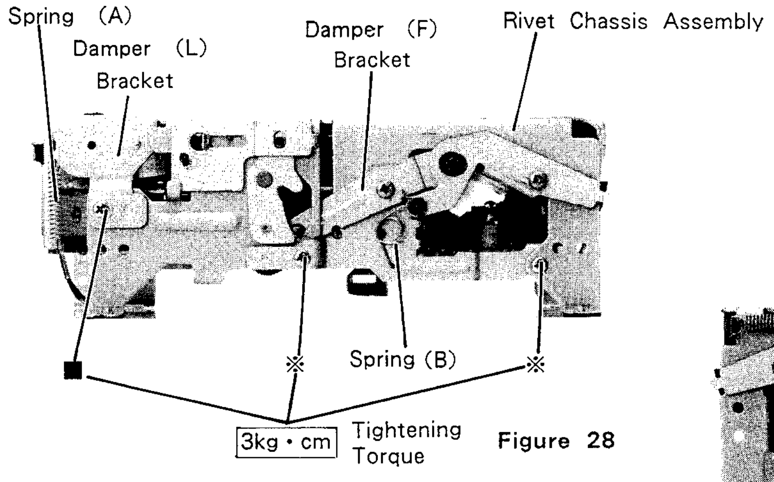

Spring (A)
Damper (L) Bracket
Damper (F) Bracket
Rivet Chassis Assembly
■
※
Spring (B)
※
3kg • cm
Tightening Torque

Figure 28

8. Removal of Damper (F) Bracket

(1) After removing the Main and Interface P. C. Boards, remove two springs (B) as shown in Figures 25 and 28.
(2) Remove two screws marked "※" as shown in Figure 28.
(3) Remove the damper from the Pickup Unit shaft, and the bracket can be removed.

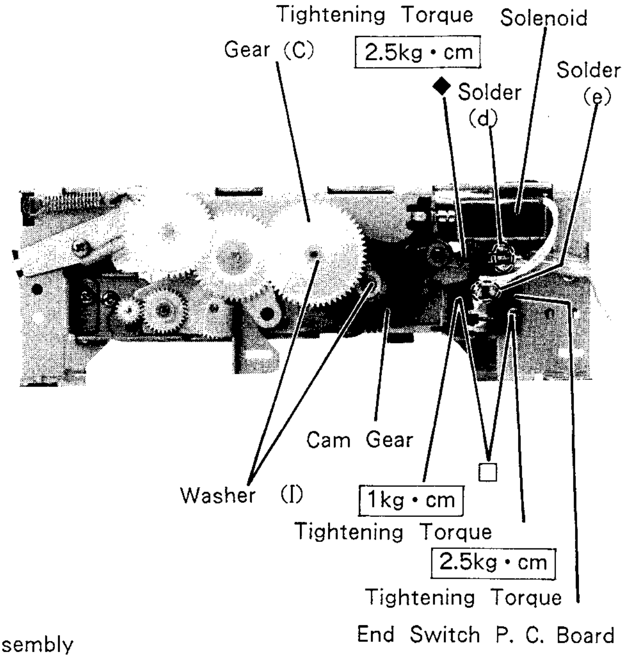

Tightening Torque
Solenoid
Gear (C)
2.5kg • cm
Solder (e)
◆ Solder (d)
Cam Gear
Washer (I)
□
1kg • cm
Tightening Torque
2.5kg • cm
Tightening Torque
End Switch P. C. Board

Figure 27

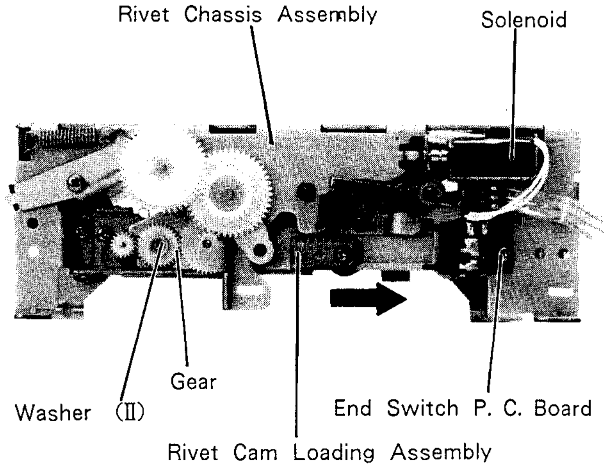

Rivet Chassis Assembly
Solenoid
Washer (II)
Gear
End Switch P. C. Board
Rivet Cam Loading Assembly

Figure 29

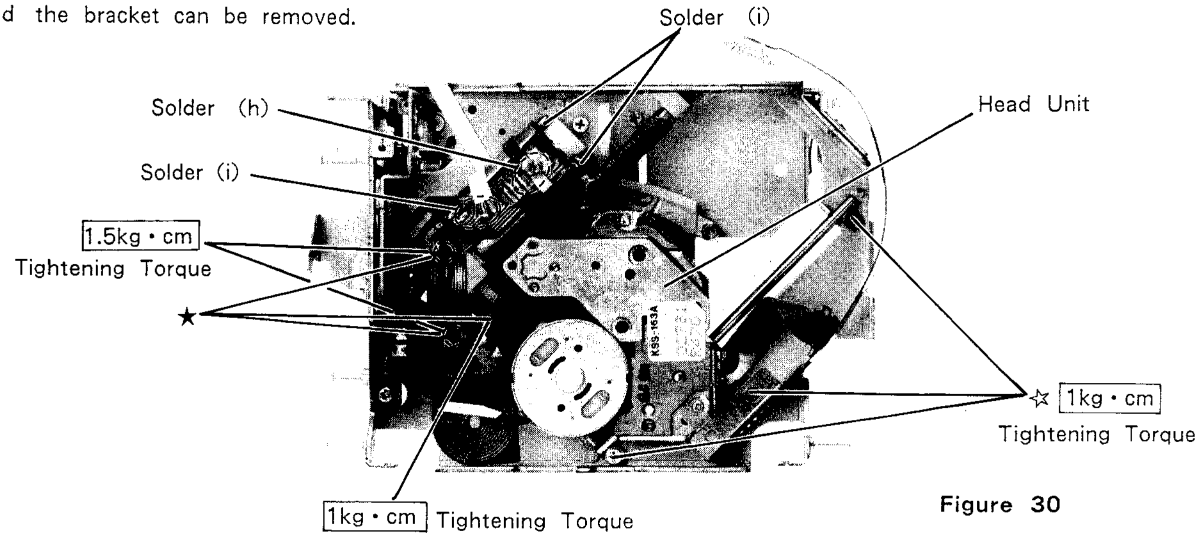

Solder (i)
Solder (h)
Solder (i)
Head Unit
1.5kg • cm
Tightening Torque
★
☆ 1kg • cm
Tightening Torque
1kg • cm Tightening Torque

Figure 30

9. Removal of Pickup Unit

(1) After removing the both bracket for the damper (L) and (F), remove the washer (I), cam gear and gear (C) as shown in Figure 27.

(2) Remove three screws marked "*", and the Pickup Unit with Rivet Loading bracket Assembly can be removed as shown in Figure 31.

(3) Remove two springs (C), remove the damper from the Pickup Unit shaft, and then the Rivet Loading Bracket Assembly can be removed as shown in Figure 25.

10. Removal of Head Unit

(1) Unsolder solder (h) as shown in Figure 30.

(2) Remove three screws marked "☆" as shown in Figure 30.

11. Removal of Servo Motor P. C. Board

(1) After removing the Head Unit, unsolder three solder (i) as shown in Figure 30.

(2) Remove three screws marked "★" as shown in Figure 30.

12. Removal of Loading Motor

(1) After removing the Rivet Loading Bracket, remove one washer (II) and gear as shown in Figure 29.

(2) After moving the Rivet Cam Loading Assembly in the arrow direction, remove two screws marked "◇" as shown in Figures 29 and 31.

13. Removal of Solenoid

(1) Unsolder the solder (e) as shown in Figure 27.

(2) Remove one screw marked "◆" as shown in Figure 27.

Precautions during Disassembling and Assembling

1) Be sure to use brand-new washer and do not use any washer which was previously used. The new washer should not have peeling on cleavage.

2) When performing soldering, take care that temperature of the iron tip will not exceed 320℃ and soldering time should be less than 3 seconds. Also make sure there is no defect soldering such as loose solder, solder short and foil breakage.

3) Useful hints for remounting the can gear and gear (C).

① Set the Rivet Loading can Assembly to theloading position as shown in Figure 33.

② Engage the gear can with the gear (C) as shown in the Figure 32, and mount them on the shafts (A) of the Arm Load (R) Assembly as shown in Figure 33.

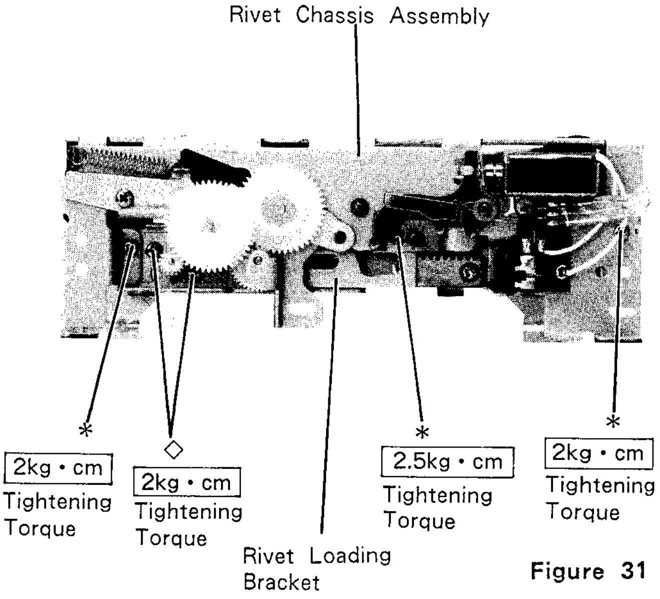

Rivet Chassis Assembly
*
2kg • cm
Tightening Torque
◇
2kg • cm
Tightening Torque
Rivet Loading Bracket
*
2.5kg • cm
Tightening Torque
*
2kg • cm
Tightening Torque

Figure 31

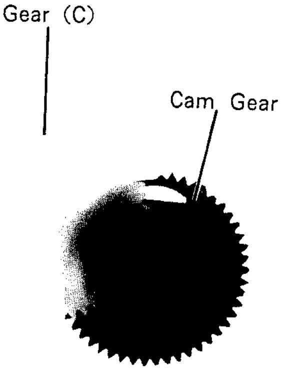

Gear (C)
Cam Gear

Figure 32

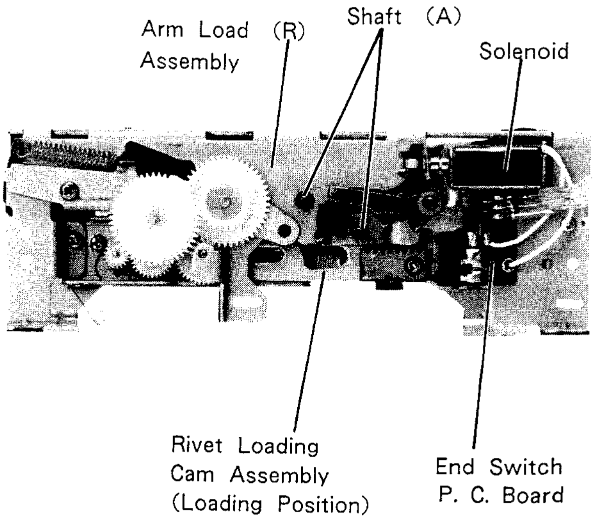

Arm Load (R) Assembly
Shaft (A)
Solenoid
Rivet Loading Cam Assembly (Loading Position)
End Switch P. C. Board

Figure 33